Service
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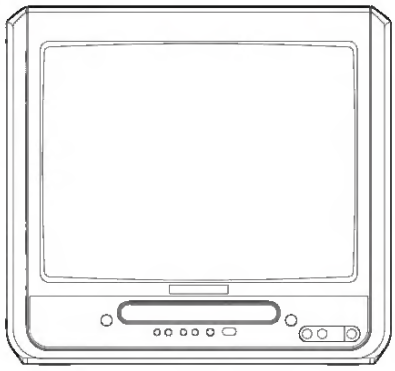

Service Manual

Contents

Chapter

Adjustment Procedures
Schematic Diagrams and CBA's
Exploded Views
Mechanical and Electrical Parts Lists

Survey of versions:

/37 NTSC

CLASS 1 LASER PRODUCT
KLASSE 1 LASER PRODUKT
KLASS 1 LASER APPARAT
CLASSE 1 PRODUIT LASER

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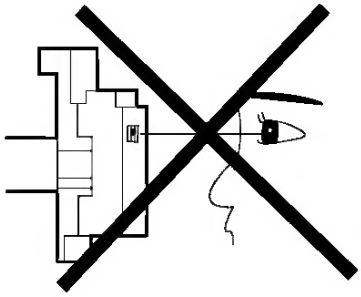
LASER BEAM SAFETY PRECAUTIONS

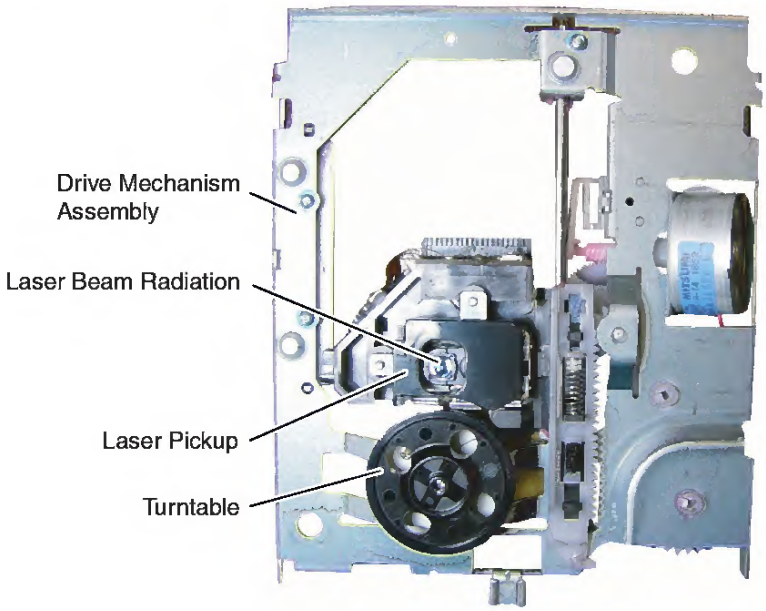
This DVD player uses a pickup that emits a laser beam.



Do not look directly at the laser beam coming from the pickup or allow it to strike against your skin.

The laser beam is emitted from the location shown in the figure. When checking the laser diode, be sure to keep your eyes at least 30 cm away from the pickup lens when the diode is turned on. Do not look directly at the laser beam.

CAUTION: Use of controls and adjustments, or doing procedures other than those specified herein, may result in hazardous radiation exposure.



CAUTION
LASER RADIATION
WHEN OPEN. DO NOT
STARE INTO BEAM.

Location: Top of DVD mechanism.

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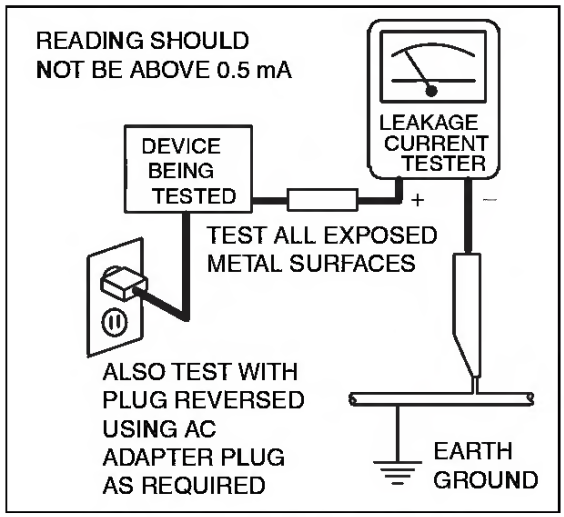
IMPORTANT SAFETY PRECAUTIONS

Prior to shipment from the factory, our products are strictly inspected for recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Safety Precautions for TV Circuit

1. **Before returning an instrument to the customer,** always make a safety check of the entire instrument, including, but not limited to, the following items:
   a. Be sure that no built-in protective devices are defective and have been defeated during servicing. (1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience. (2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including but not limited to, nonmetallic control knobs, insulating fishpapers, adjustment and compartment covers/shields, and isolation resistor/capacitor networks. **Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning. Servicers who defeat safety features or fail to perform safety checks may be liable for any resulting damage.**
   b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to, (1) spacing between the picture tube and the cabinet mask, (2) excessively wide cabinet ventilation slots, and (3) an improperly fitted and/or incorrectly secured cabinet back cover.
   c. **Antenna Cold Check -** With the instrument AC plug removed from any AC source, connect an electrical jumper across the two AC plug prongs. Place the instrument AC switch in the on position. Connect one lead of an ohmmeter to the AC plug prongs tied together and touch the other ohmmeter lead in turn to each tuner antenna input exposed terminal screw and, if applicable, to the coaxial connector. If the measured resistance is less than 1.0 megohm or greater than 5.2 megohm, an abnormality exists that must be corrected before the instrument is returned to the customer. Repeat this test with the instrument AC switch in the off position.
   d. **Leakage Current Hot Check -** With the instrument completely reassembled, plug the AC line cord directly into a 120 V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI) C101.1 Leakage Current for Appliances and Underwriters Laboratories (UL) 1410, (50.7). With the instrument AC switch first in the on position and then in the off position, measure from a known earth ground (metal water pipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle brackets, metal cabinet, screw heads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 0.5 milli-ampere. Reverse the instrument power cord plug in the outlet and repeat the test.



ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER OR BEFORE CONNECTING THE ANTENNA OR ACCESSORIES.

   e. **X-Radiation and High Voltage Limits -** Because the picture tube is the primary potential source of X-radiation in solid-state TV receivers, it is specially constructed to prohibit X-radiation emissions. For continued X-radiation protection, the replacement picture tube must be the same type as the original. Also, because the picture tube shields and mounting hardware perform an X-radiation protection function, they must be correctly in place. High voltage must be measured each time servicing is performed that involves B+, horizontal deflection or high voltage. Correct operation of the X-radiation protection circuits also must be reconfirmed each time they are serviced. (X-radiation protection circuits also

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may be called "horizontal disable" or "hold down.") Read and apply the high voltage limits and, if the chassis is so equipped, the X-radiation protection circuit specifications given on instrument labels and in the Product Safety & X-Radiation Warning note on the service data chassis schematic. High voltage is maintained within specified limits by close tolerance safety-related components/ adjustments in the high-voltage circuit. If high voltage exceeds specified limits, check each component specified on the chassis schematic and take corrective action.

2. Read and comply with all caution and safety-related notes on or inside the receiver cabinet, on the receiver chassis, or on the picture tube.
3. **Design Alteration Warning -** Do not alter or add to the mechanical or electrical design of this TV receiver. Design alterations and additions, including, but not limited to circuit modifications and the addition of items such as auxiliary audio and/or video output connections, might alter the safety characteristics of this receiver and create a hazard to the user. Any design alterations or additions will void the manufacturer's warranty and may make you, the servicer, responsible for personal injury or property damage resulting therefrom.
4. **Picture Tube Implosion Protection Warning -** The picture tube in this receiver employs integral implosion protection. For continued implosion protection, replace the picture tube only with one of the same type number. Do not remove, install, or otherwise handle the picture tube in any manner without first putting on shatterproof goggles equipped with side shields. People not so equipped must be kept safely away while picture tubes are handled. Keep the picture tube away from your body. Do not handle the picture tube by its neck. Some "in-line" picture tubes are equipped with a permanently attached deflection yoke; because of potential hazard, do not try to remove such "permanently attached" yokes from the picture tube.
5. **Hot Chassis Warning -**
   a. Some TV receiver chassis are electrically connected directly to one conductor of the AC power cord and maybe safety-serviced without an isolation transformer only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC power source. To confirm that the AC power plug is inserted correctly, with an AC voltmeter, measure between the chassis and a known earth ground. If a voltage reading in excess of 1.0V is obtained, remove and reinsert the AC power plug in the opposite polarity and again measure the voltage potential between the chassis and a known earth ground.
   b. Some TV receiver chassis normally have 85V AC(RMS) between chassis and earth ground regardless of the AC plug polarity. This chassis can be safety-serviced only with an isolation transformer inserted in the power line between the receiver and the AC power source, for both personnel and test equipment protection.
   c. Some TV receiver chassis have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground systems are electrically separated by insulation material that must not be defeated or altered.
6. Observe original lead dress. Take extra care to assure correct lead dress in the following areas: a. near sharp edges, b. near thermally hot parts-be sure that leads and components do not touch thermally hot parts, c. the AC supply, d. high voltage, and, e. antenna wiring. Always inspect in all areas for pinched, out of place, or frayed wiring. Check AC power cord for damage.
7. Components, parts, and/or wiring that appear to have overheated or are otherwise damaged should be replaced with components, parts, or wiring that meet original specifications. Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.
8. **Product Safety Notice -** Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by a ⚠ on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The product's safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are strictly inspected to confirm they comply with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

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Precautions during Servicing

A. Parts identified by the ⚠ symbol are critical for safety.
Replace only with part number specified.

B. In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.

C. Use specified internal wiring. Note especially:

1) Wires covered with PVC tubing
2) Double insulated wires
3) High voltage leads

D. Use specified insulating materials for hazardous live parts. Note especially:

1) Insulation Tape
2) PVC tubing
3) Spacers
4) Insulators for transistors.

E. When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.

F. Observe that the wires do not contact heat producing parts (heat sinks, oxide metal film resistors, fusible resistors, etc.)

G. Check that replaced wires do not contact sharp edged or pointed parts.

H. When a power cord has been replaced, check that 5~6 kg of force in any direction will not loosen it.

I. Also check areas surrounding repaired locations.

J. Be careful that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

K. Crimp type wire connector
When replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, in order to prevent shock hazards, perform carefully and precisely the following steps.
Replacement procedure

1) Remove the old connector by cutting the wires at a point close to the connector.
Important: Do not re-use a connector (discard it).
2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.
3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.
4) Use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

L. When connecting or disconnecting the DVD/VCR connectors, first, disconnect the AC plug from the AC supply socket.

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Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1: Ratings for selected area

AC Line Voltage	Region	Clearance Distance (d), (d')
110 to 130 V	U.S.A. or Canada	≥ 3.2 mm (0.126 inches)

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

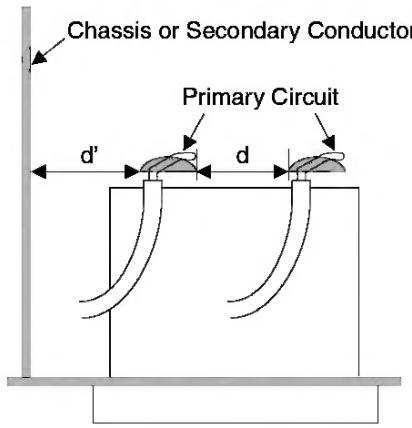

Fig. 1

2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method: (Power ON)

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See Fig. 2 and following table.

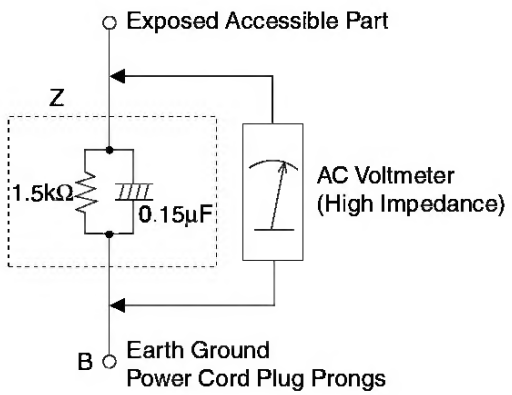

Fig. 2

Table 2: Leakage current ratings for selected areas

AC Line Voltage	Region	Load Z	Leakage Current (i)	Earth Ground (B) to:
110 to 130 V	U.S.A. or Canada	0.15 µF CAP. & 1.5 kΩ RES. Connected in parallel	i ≤ 0.5 mA rms	Exposed accessible parts

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

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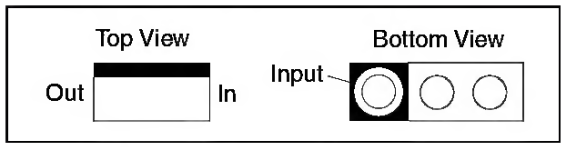
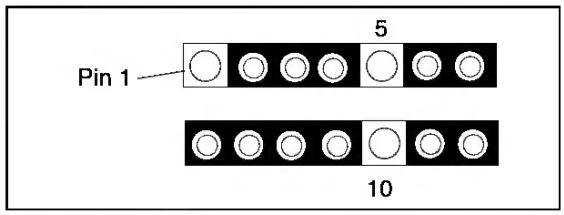
STANDARD NOTES FOR SERVICING

Circuit Board Indications

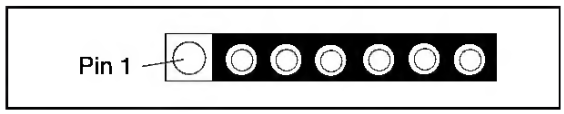
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



2. For other ICs, pin 1 and every fifth pin are indicated as shown.

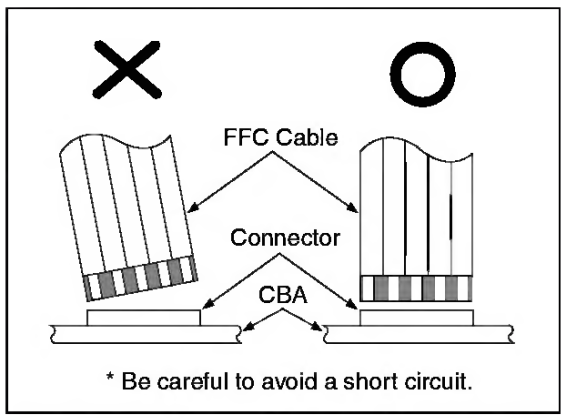


3. The 1st pin of every male connector is indicated as shown.



Instructions for Connectors

1. When you connect or disconnect the FFC (Flexible Foil Connector) cable, be sure to first disconnect the AC cord.
2. FFC (Flexible Foil Connector) cable should be inserted parallel into the connector, not at an angle.



Pb (Lead) Free Solder

When soldering, be sure to use the Pb free solder.

Information about lead-free soldering

Philips CE is producing lead-free sets from 1.1.2005 onwards.

IDENTIFICATION

Regardless of special logo (not always indicated)

One must treat all sets from 1 Jan 2005 onwards, according to the next rule:
Serial Number gives a 9-digit. Digit 2&3 shows the WEEK, and digit 4 shows the YEAR.

So from 015 onwards=from 1 Jan 2005 onwards

Important note: *In fact also products of year 2004 must be treated in this way as long as you avoid mixing solder-alloys (leaded/ lead-free). So best to always use SAC305 and the higher temperatures belong to this.*

Due to lead-free technology some rules have to be respected by the workshop during a repair:

- Use only lead-free solder alloy Philips SAC305 with order code 0622 149 00106. If lead-free solder-paste is required, please contact the manufacturer of your solder-equipment. In general use of solder-paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free solder alloy. The solder tool must be able
  - To reach at least a solder-temperature of 400°C,
  - To stabilize the adjusted temperature at the solder-tip
  - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C - 380°C is reached and stabilized at the solder joint. Heating-time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips switch off un-used equipment, or reduce heat.

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- Mix of lead-free solder alloy / parts with leaded solder alloy / parts is possible but PHILIPS recommends strongly to avoid mixed solder alloy types (leaded and lead-free).
  If one cannot avoid or does not know whether product is lead-free, clean carefully the solder-joint from old solder alloy and re-solder with new solder alloy (SAC305).
- Use only original spare-parts listed in the Service-Manuals. Not listed standard-material (commodities) has to be purchased at external companies.
- Special information for BGA-ICs:
  - always use the 12nc-recognizable soldering temperature profile of the specific BGA (for de-soldering always use the lead-free temperature profile, in case of doubt)
  - lead free BGA-ICs will be delivered in so-called 'dry-packaging' (sealed pack including a silica gel pack) to protect the IC against moisture. Affer opening, dependent of MSL-level seen on indicator-label in the bag, the BGA-IC possibly still has to be baked dry. (MSL=Moisture Sensitivity Level). This will be communicated via AYS-website.
  Do not re-use BGAs at all.
- For sets produced before 1.1.2005 (except products of 2004), containing leaded solder-alloy and components, all needed spare-parts will be available till the end of the service-period. For repair of such sets nothing changes.
- On our website **www.atyourservice.ce.Philips.com** you find more information to:
  - BGA-de-/soldering (+ baking instructions)
  - Heating-profiles of BGAs and other ICs used in Philips-sets

You will find this and more technical information within the "magazine", chapter "workshop news".

For additional questions please contact your local repair-helpdesk.

How to Remove / Install Flat Pack-IC

1. Removal

With Hot-Air Flat Pack-IC Desoldering Machine:

1. Prepare the hot-air flat pack-IC desoldering machine, then apply hot air to the Flat Pack-IC (about 5 to 6 seconds). (Fig. S-1-1)

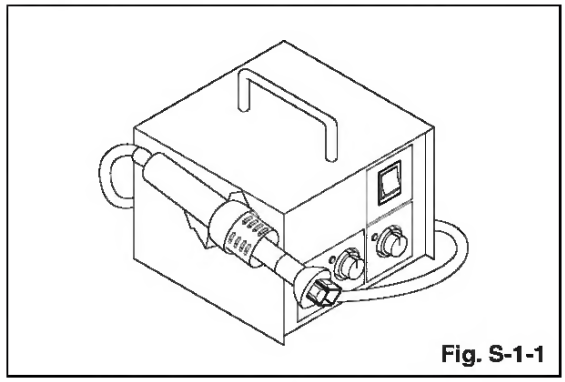

Fig. S-1-1

2. Remove the flat pack-IC with tweezers while applying the hot air.
3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

CAUTION:

1. The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.
2. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape around the flat pack-IC to protect other parts from damage. (Fig. S-1-2)
3. The flat pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or the solder lands under the IC when removing it.

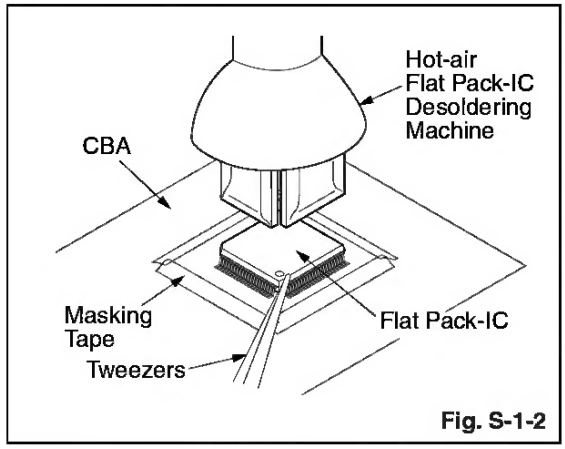

Fig. S-1-2

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With Soldering Iron:

1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)

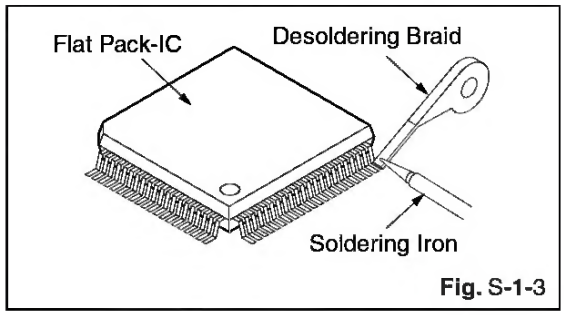

Fig. S-1-3

2. Lift each lead of the flat pack-IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air desoldering machine. (Fig. S-1-4)

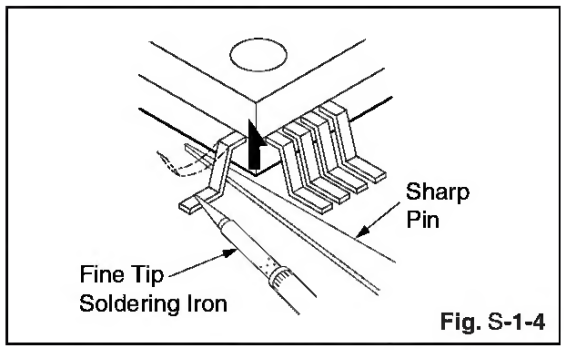

Fig. S-1-4

3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

With Iron Wire:

1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)
2. Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.
3. While heating the pins using a fine tip soldering iron or hot air blower, pull up the wire as the solder melts so as to lift the IC leads from the CBA contact pads as shown in Fig. S-1-5.
4. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
5. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

Note: When using a soldering iron, care must be taken to ensure that the flat pack-IC is not being held by glue. When the flat pack-IC is removed from the CBA, handle it gently because it may be damaged if force is applied.

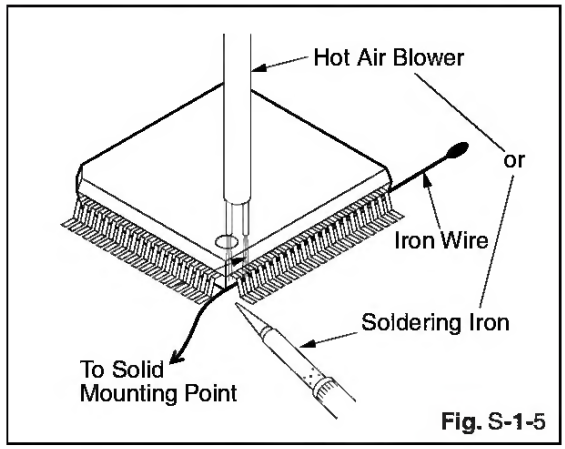

Fig. S-1-5

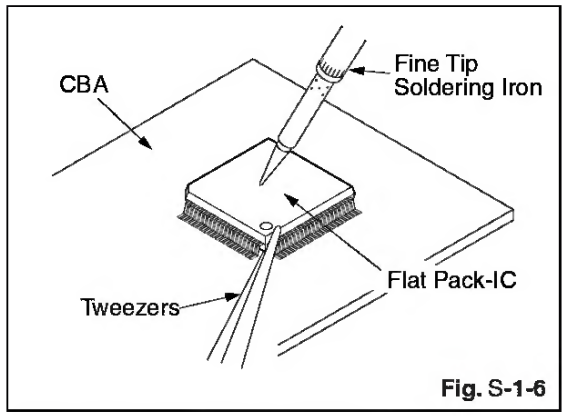

Fig. S-1-6

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2. Installation

1. Using desoldering braid, remove the solder from the foil of each pin of the flat pack-IC on the CBA so you can install a replacement flat pack-IC more easily.
2. The "●" mark on the flat pack-IC indicates pin 1. (See Fig. S-1-7.) Be sure this mark matches the 1 on the PCB when positioning for installation. Then presolder the four corners of the flat pack-IC. (See Fig. S-1-8.)
3. Solder all pins of the flat pack-IC. Be sure that none of the pins have solder bridges.

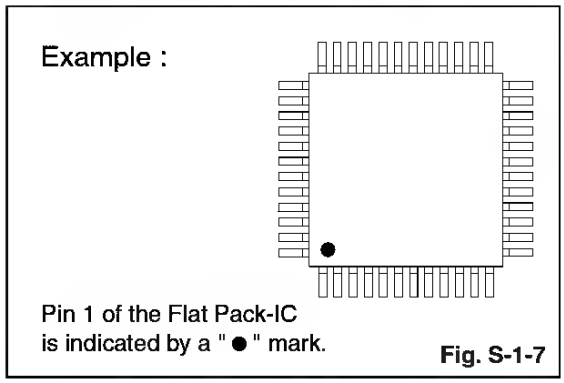


Fig. S-1-7

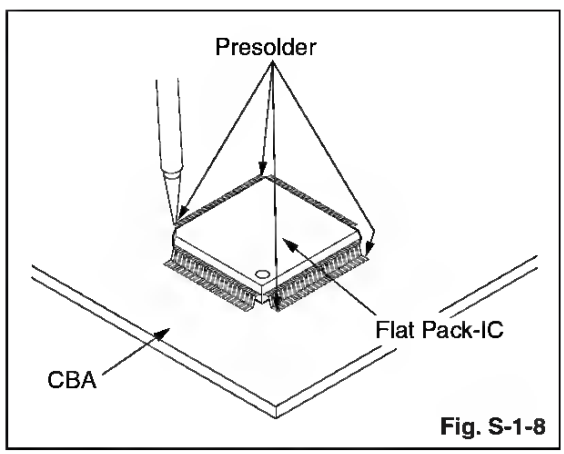


Fig. S-1-8

Instructions for Handling Semi-conductors

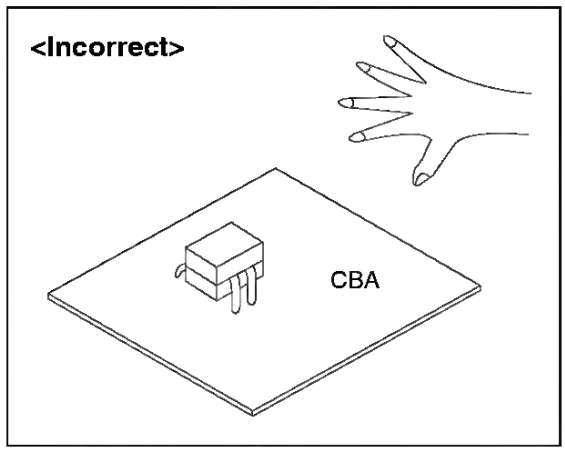
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

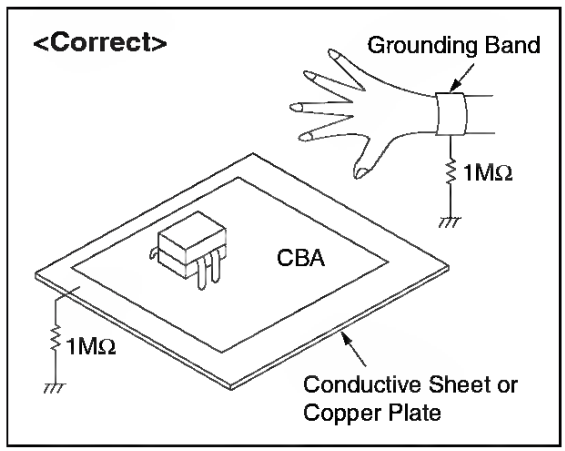
1. Ground for Human Body

Be sure to wear a grounding band (1 MΩ) that is properly grounded to remove any static electricity that may be charged on the body.

2. Ground for Workbench

Be sure to place a conductive sheet or copper plate with proper grounding (1 MΩ) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing.





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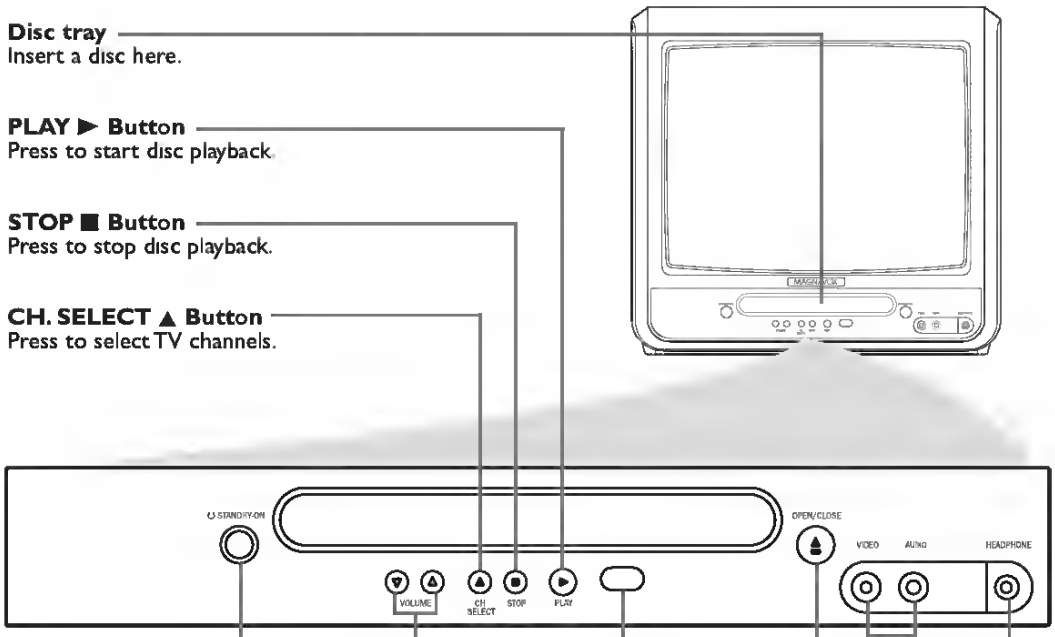
OPERATING CONTROLS AND FUNCTIONS


Disc tray
Insert a disc here.
PLAY ► Button
Press to start disc playback.
STOP ■ Button
Press to stop disc playback.
CH. SELECT ▲ Button
Press to select TV channels.
STANDBY-ON ⏻ Button
Press to turn the TV/DVD on or off.
VOLUME △/▽ Buttons
Press to adjust the volume.
Remote Sensor
Receives a signal from your remote control so you can operate the TV/DVD from a distance.
OPEN/CLOSE ▲ Button
Press to open or close the disc tray.
VIDEO and AUDIO IN jacks
Use audio and video cables to connect these jacks to the audio and video out jacks of a Camcorder, DVD player, etc. This lets you watch materials playing on the other equipment when you choose AUX at the TV/DVD.
HEADPHONE jack
Connect headphones (not supplied) here for personal listening.
STANDBY-ON
OPEN/CLOSE
VIDEO
AUDIO
HEADPHONE
VOLUME
CH SELECT
STOP
PLAY

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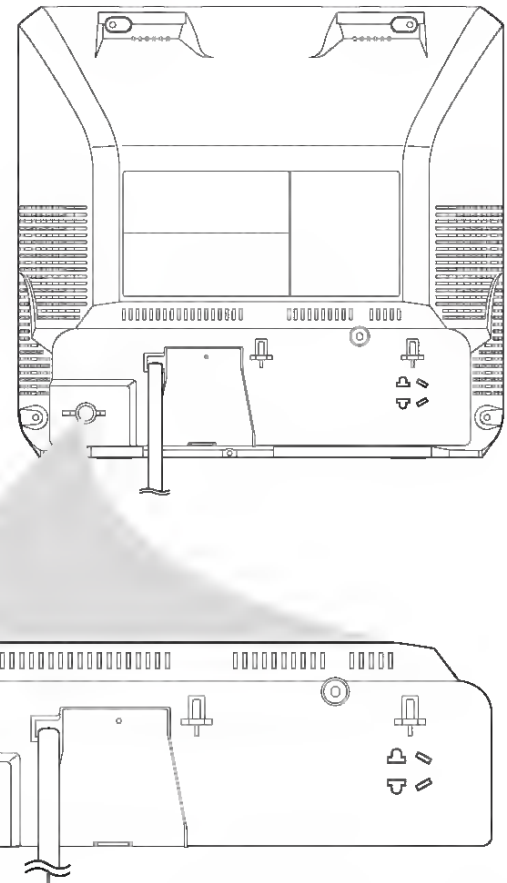

ANT. jack (Antenna In)
Connect an antenna or Cable TV signal here. This brings TV channels to the TV/DVD. If you do not connect an antenna or Cable TV signal to the TV/DVD (or connect to a Cable Box/Satellite Receiver through this jack), you will not receive any TV channels.

Power Cord
Connect to a standard AC outlet (120V/60Hz).

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STANDBY-ON ⏻ Button
Press to turn on or off the TV/DVD.

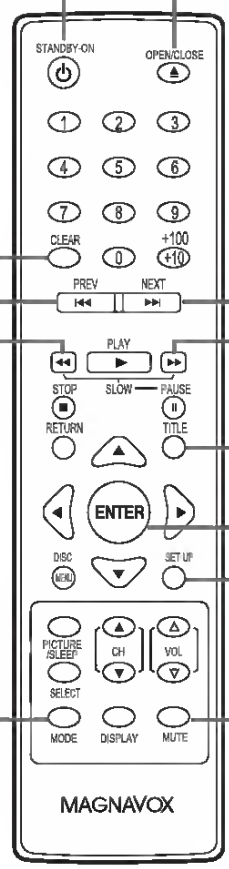
CLEAR Button
Press to reset or erase wrong information.

PREV ⏮ Button
During playback,
- press to skip to the beginning of the current track/chapter.
- press repeatedly to skip to previous tracks/chapters.

◀◀ Button
During playback,
- Press to search backward.
- Use this button in combination with PAUSE ❚❚ to start the Slow Motion Playback.

MODE Button
Press to access the settings listed below:
- **Audio Setting**
- **Search Setting**
- **Repeat Setting**
- **A-B Repeat Setting**
- **Subtitle Setting**
- **Camera Angle Setting**
- **Zoom Setting**
- **Black Level Setting**
- **Random Playback Setting**
- **Program Playback Setting**
- **Folder Playback Setting**

• Some settings are not available in specific modes.



OPEN/CLOSE ⏏ Button
Press to open or close the disc tray.

NEXT ⏭ Button
During playback,
- press to skip to the next track or chapter.

▶▶ Button
During playback,
- Press to search forward.
- Use this button in combination with PAUSE ❚❚ to start the Slow Motion Playback.

TITLE Button
Press to access a DVD's Title Menu if available.

ENTER Button
Press to accept or change a menu setting.

SET-UP Button
Press to access or remove the TV/DVD's Setup Menus.

MUTE Button
Press to mute or restore the sound.

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Number Buttons
TV Mode: Press two digits to access a specific channel. Press 0 before the number of a single-digit channel.
+100/+10 button: To select channels 100 or higher, press +100/+10, then the Number buttons of the last 2 digits of the channel number.
DVD Mode: Use the Number buttons to enter a track or chapter number.
+100/+10 button: Press before entering double-digit numbers. For example, to select chapter 16, press +100/+10, then 1, 6.

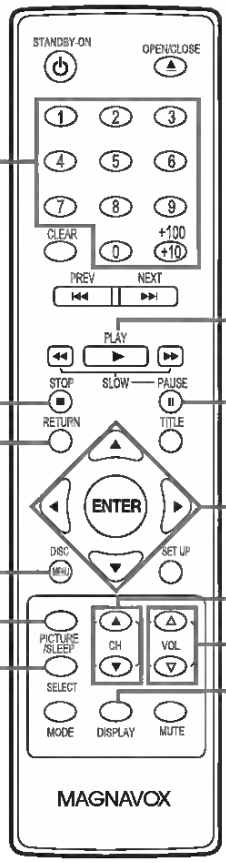
STOP ■ Button
Press to stop disc playback.

RETURN Button
Press to go to the previous Setup Menu in DVD or TV mode. Press to remove On-Screen Displays.

DISC MENU Button
Press to access DVD disc menus.

PICTURE/SLEEP Button
Press to set the Sleep Timer. Press to access the picture controls.

SELECT Button
Press to choose AUX, TV or DVD mode. When you select DVD mode using this button, you must press PLAY ▶ or OPEN/CLOSE ▲ before you can access the DVD features or setup menus.



PLAY ▶ Button
Press to start playing a disc.

PAUSE ❚❚ Button
Press to pause DVD playback. Press repeatedly to advance the DVD picture one frame at a time.

Arrow ▲▼◀▶ Buttons
Use the Arrow buttons to select or adjust menu items.

CH. (channel) ▲/▼ Buttons
Press to select memorized TV channels.

VOL. (volume) △/▽ Buttons
Press to adjust the volume.

DISPLAY Button
TV Mode: Press to see the channel on the screen.
DVD Mode: Press to see the disc status on the screen.

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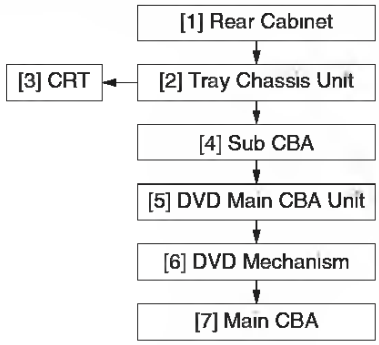
CABINET DISASSEMBLY INSTRUCTIONS

1. Disassembly Flowchart

This flowchart indicates the disassembly steps for the cabinet parts, and the CBA in order to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route and dress the cables as they were.

CAUTION!

When removing the CRT, be sure to discharge the Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap.



2. Disassembly Method

ID/ LOC. No.	PART	REMOVAL		
		Fig. No.	REMOVE/ *UNHOOK/UNLOCK/ RELEASE/UNPLUG/ DESOLDER	Note
[1]	Rear Cabinet	D1	4(S-1), (S-2), (S-3)	-
[2]	Tray Chassis Unit	D2, D3, D5	Anode Cap, CN2801, CN2505, CRT CBA, CN601, CN1571	1
[3]	CRT	D2	4(S-4)	-
[4]	Sub CBA	D3, D5	CN001, CN002, CN1101, CN1102, Desolder	-
[5]	DVD Main CBA Unit	D3, D4, D5	2(S-5), CN201, CN301	2-1 2-2 3
[6]	DVD Mechanism	D3, D4	4(S-6)	2-1 2-2 3
[7]	Main CBA	D3	3(S-7)	-
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)

NOTES

(1): Order of steps in Procedure. When reassembling, follow the steps in reverse order.These numbers are also used as the Identification (location) No. of parts in Figures.

(2): Parts to be removed or installed.

(3): Fig. No. showing Procedure of Part Location.

(4): Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
S=Screw, P=Spring, L=Locking Tab, CN=Connector, *=Unhook, Unlock, Release, Unplug, or Desolder
2(S-2) = two Screws (S-2)

(5): Refer to the following "Reference Notes in the Table."

Reference Notes in the Table

CAUTION !

When removing the CRT, be sure to discharge the Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap.

CAUTION 1: Discharge the Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap.

1. Disconnect the following: Anode Cap, CN2801, CN2505, CRT CBA, CN601 and CN1571. Then remove Tray Chassis Unit.

CAUTION 2: Electrostatic breakdown of the laser diode in the optical system block may occur as a potential difference caused by electrostatic charge accumulated on cloth, human body etc., during unpacking or repair work.

To avoid damage of pickup, follow next procedures.

2-1. Short the three short lands of FPC cable with solder before removing the FFC cable (CN201) from it. If you disconnect the FFC cable (CN201), the laser diode of pickup will be destroyed. (Fig. 4)

2-2. Disconnect Connector (CN301) on the DVD Main CBA Unit.

CAUTION 3: When reassembling, confirm the FFC cable (CN201) is connected completely. Then remove the solder from the three short lands of FPC cable. (Fig. 4)

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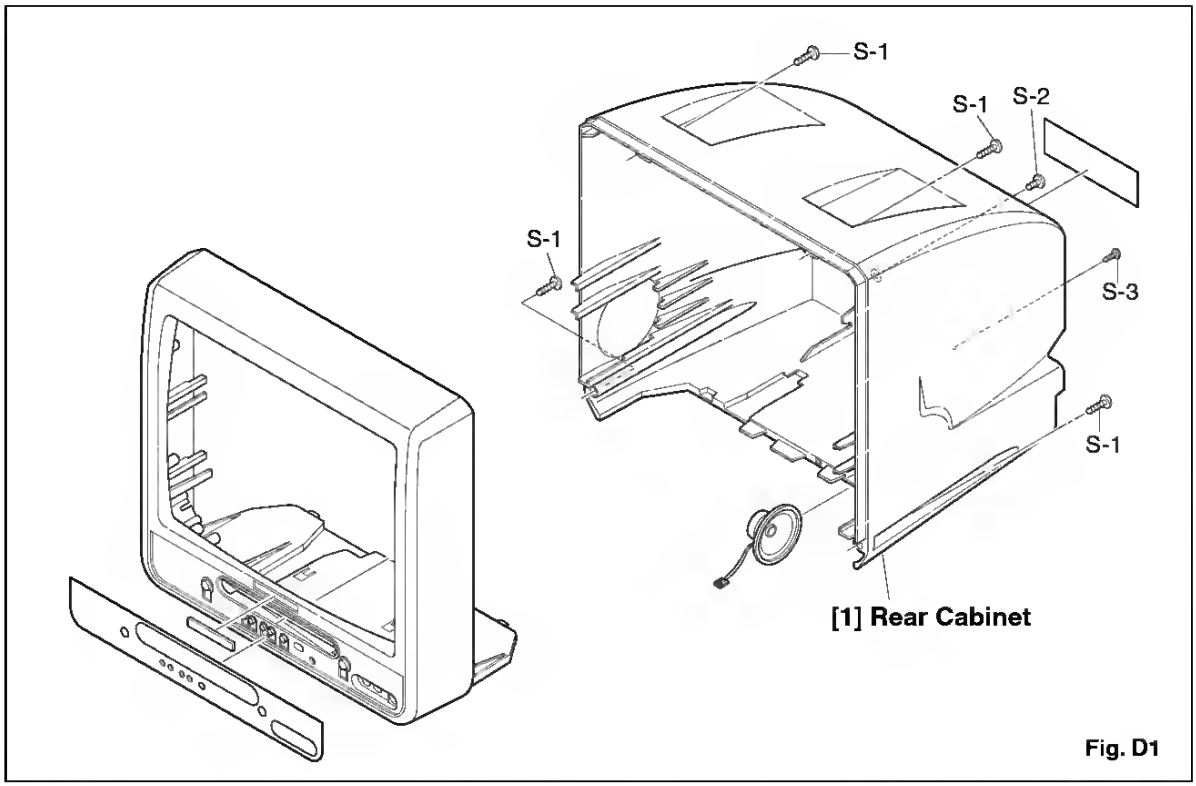

Fig. D1

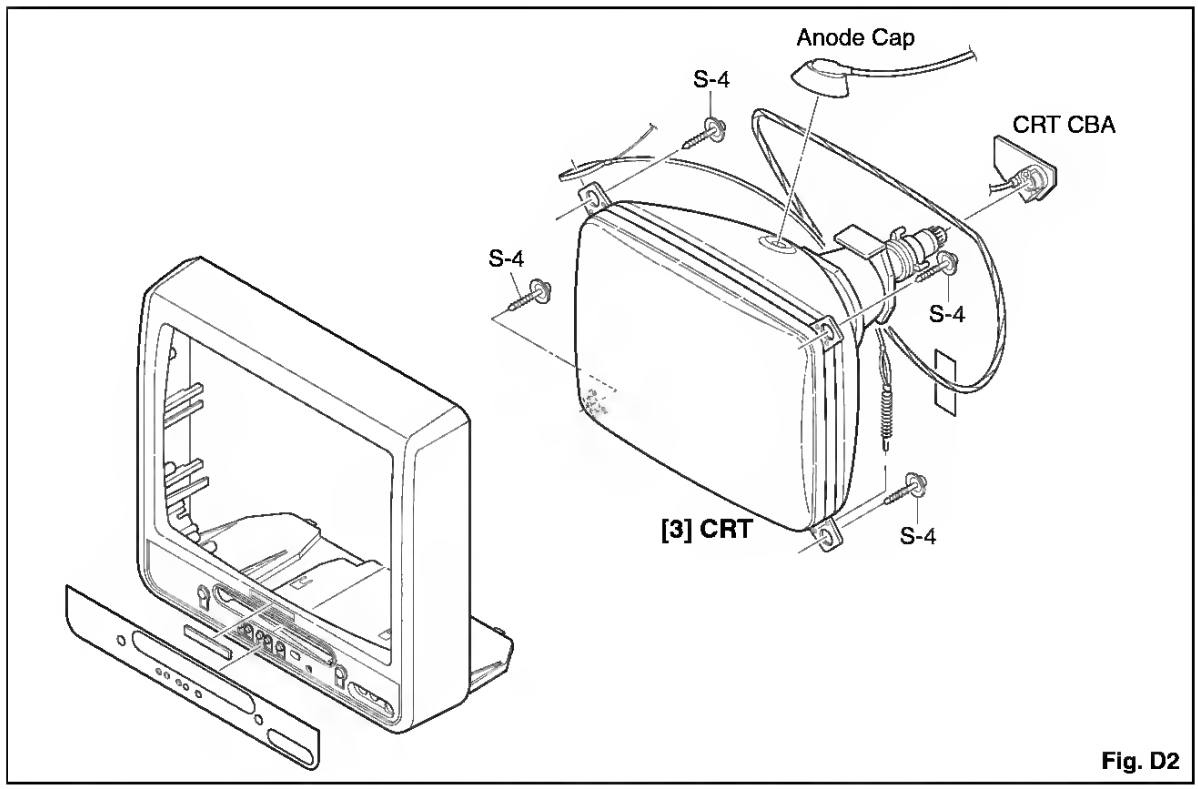

Fig. D2

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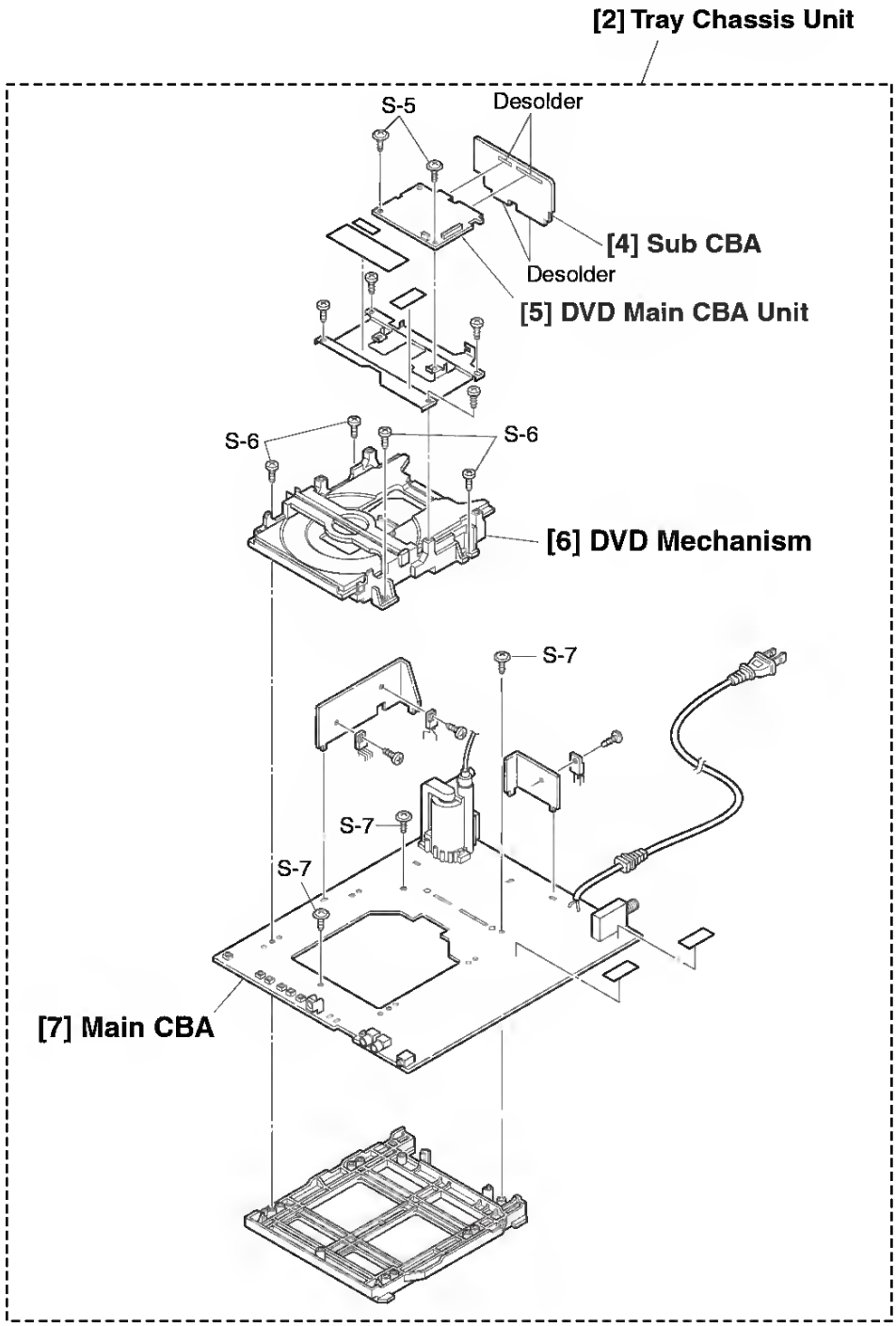

Fig. D3

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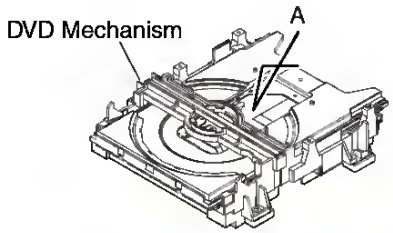

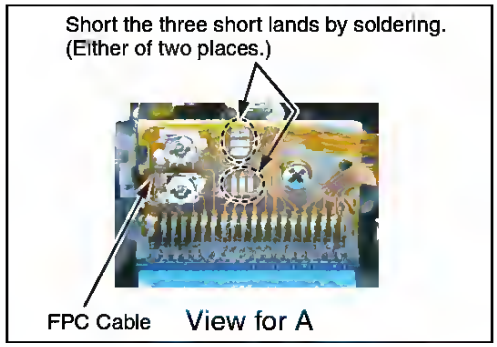

Fig. D4

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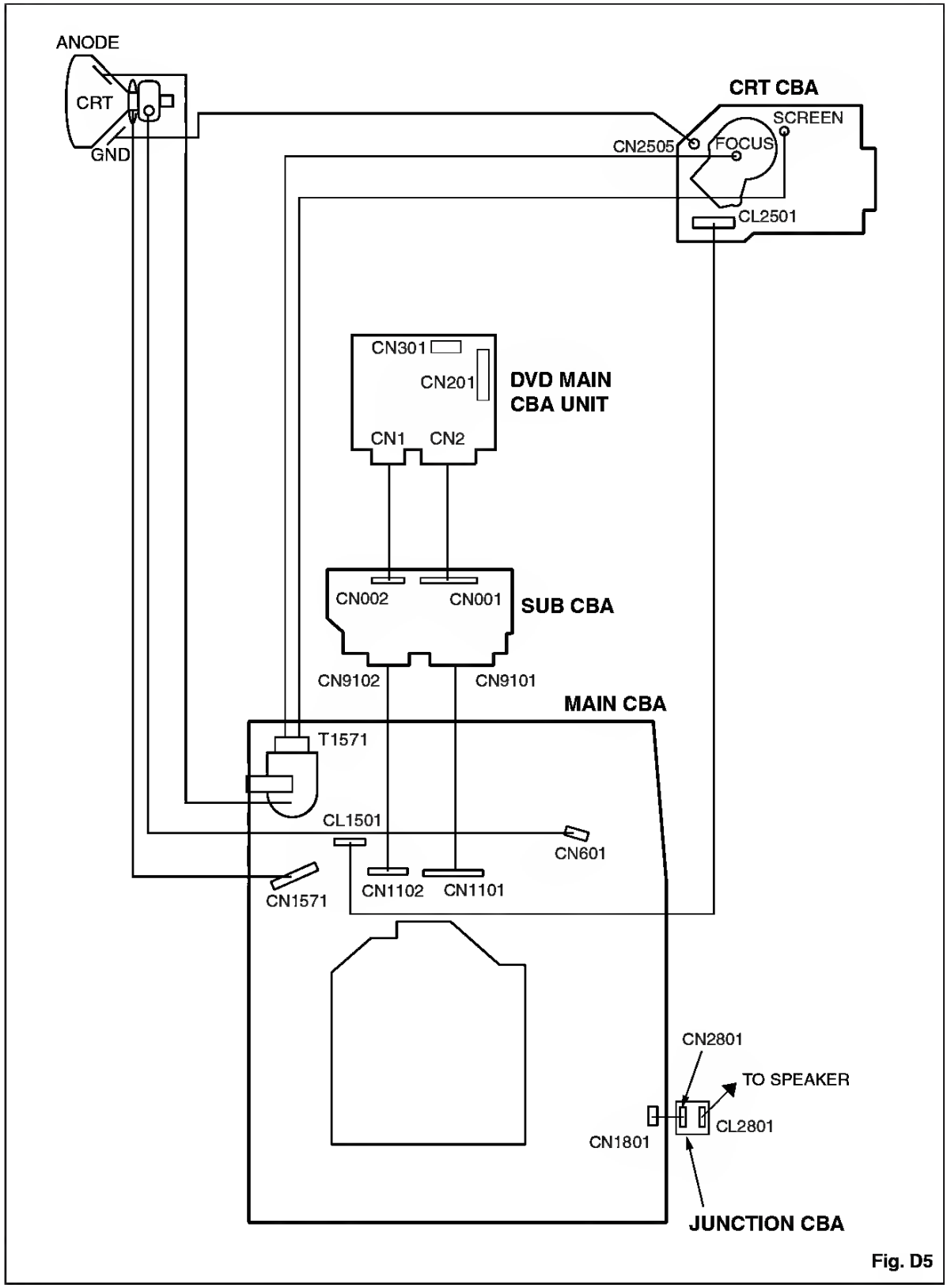

Fig. D5

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ELECTRICAL ADJUSTMENT INSTRUCTIONS

General Note:

"CBA" is abbreviation for "Circuit Board Assembly."

NOTE:

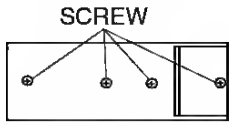
Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to perform these adjustments only after all repairs and replacements have been completed.
Also, do not attempt these adjustments unless the proper equipment is available.

Test Equipment Required

1. NTSC Pattern Generator (Color Bar W/White Window, Red Color, Dot Pattern, Gray Scale, Monoscope, Multi-Burst)
2. AC Milli Voltmeter (RMS)
3. DC Voltmeter
4. Oscilloscope: Dual-trace with 10:1 probe,
   V-Range: 0.001~50V/Div,
   F-Range: DC~AC-60MHz
5. Frequency Counter
6. Plastic Tip Driver
7. Color Analyzer

How to make service remote control unit:

1. Prepare remote control unit (Part No. NE241UD). Remove 4 screws from the back lid. (Fig. 1)



Remote control unit (Bottom) **Fig. 1**

2. Cut off pin 10 of the remote control microprocessor and short circuit pins 10 and 17 of the microprocessor with a jumper wire.

How to enter the Service mode:

Service mode:

1. Use the service remote control unit.
2. Turn the power on.
3. Press "DISC MENU" button on the service remote control unit.
   - "**h" ("**" differs depending on the models) is indicated on the lower right of the screen.

1. DC 105V (+B) Adjustment

Purpose: To obtain correct operation.

Symptom of Misadjustment: The picture is dark and unit does not operate correctly.

Test point	Adj. Point	Mode	Input
J1124(+B) GND	VR1601	---	-----
Tape	**M. EQ.**	**Spec.**	
---	DC Voltmeter Plastic Tip Driver	+105±0.5V DC	

Note:
J1124 (+B), VR1601 --- Main CBA

1. Connect the unit to AC Power Outlet.
2. Connect DC Volt Meter to J1124 (+B) and GND.
3. Adjust VR1601 so that the voltage of J1124 (+B) becomes +105±0.5V DC.

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2. Setting for BRIGHT, CONTRAST, COLOR, TINT, V-TINT and SHARP Data Values

General

1. Enter the Service mode. (See page 1-6-1.)
2. Press "PICTURE" button on the service remote control unit. Display changes "BRT," "CNT," "COL," "TNT," "V-TNT," and "SHP" cyclically when "PICTURE" button is pressed.

BRIGHT (BRT)

1. Press "PICTURE" button on the service remote control unit. Then select "BRIGHT" (BRT) display.
2. Press "CH. ▲ / ▼" buttons on the service remote control unit so that the value of "BRIGHT" (BRT) becomes 90.

CONTRAST (CNT)

1. Press "PICTURE" button on the service remote control unit. Then select "CONTRAST" (CNT) display.
2. Press "CH. ▲ / ▼" buttons on the service remote control unit so that the value of "CONTRAST" (CNT) becomes 80.

COLOR (COL)

1. Press "PICTURE" button on the service remote control unit. Then select "COLOR" (COL) display.
2. Press "CH. ▲ / ▼" buttons on the service remote control unit so that the value of "COLOR" (COL) becomes 58.

TINT (TNT)

1. Press "PICTURE" button on the service remote control unit. Then select "TINT" (TNT) display.
2. Press "CH. ▲ / ▼" buttons on the service remote control unit so that the value of "TINT" (TNT) becomes 56.

V-TINT (V-TNT)

1. Press "PICTURE" button on the service remote control unit. Then select "V-TINT" (V-TNT) display.
2. Press "CH. ▲ / ▼" buttons on the service remote control unit so that the value of "V-TINT" (V-TNT) becomes 56.

SHARP (SHP)

1. Press "PICTURE" button on the service remote control unit. Then select "SHARP" (SHP) display.
2. Press "CH. ▲ / ▼" buttons on the service remote control unit so that the value of "SHARP" (SHP) becomes 40.

3. C-Trap Adjustment

Purpose: To get minimum leakage of the color signal carrier.

Symptom of Misadjustment: If C-Trap Adjustment is incorrect, stripes will appear on the screen.

Test point	Adj. Point	Mode	Input
J1080 (TP.BLUE)	CH. ▲ / ▼ buttons	---	Color Bar
Tape	**M. EQ.**	**Spec.**	
---	Oscilloscope Pattern Generator	---	

Figure

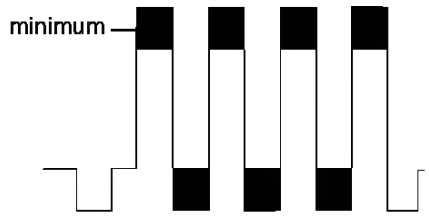

Fig. 2

Note: J1080 (TP.BLUE)--- Main CBA

1. Connect oscilloscope to J1080.
2. Input a color bar signal from RF input.
   Enter the Service mode. (See page 1-6-1.)
3. Press "0" button on the remote control unit and select C-TRAP mode.
4. Press "CH. ▲ / ▼" buttons on the remote control unit so that the carrier leakage B-Out (3.58MHz) value becomes minimum on the oscilloscope.
5. Turn the power off and on again.

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4. V. Size Adjustment

Purpose: To obtain correct vertical height of screen image.

Symptom of Misadjustment: If V. Size is incorrect, vertical height of image on the screen may not be properly displayed.

Test point	Adj. Point	Mode	Input
---	CH. ▲ / ▼ buttons	---	Monoscope
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	90±5%	

1. Operate the unit for at least 20 minutes.
2. Enter the Service mode. (See page 1-6-1.) Press "9" button on the remote control unit and select V-S mode. (Press "9" button then display will change to V-P and V-S).
3. Input monoscope pattern.
4. Press "CH. ▲ / ▼" buttons on the remote control unit so that the monoscope pattern is 90±5% of display size and the circle is round.

5. V. Shift Adjustment

Purpose: To obtain correct vertical position of screen image.

Symptom of misadjustment: If V. Position is incorrect, vertical position of image on the screen may not be properly displayed.

Test point	Adj. Point	Mode	Input
---	Screen Control, CH. ▲ / ▼ buttons	RF	Monoscope
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	90±5%	

Note: Use service remote control unit

1. Operate the unit for at least 20 minutes.
2. Enter the Service mode. (See page 1-6-1.)
3. Input monoscope pattern.
4. Press "9" button on the service remote control unit and select "V-P" mode. (Display changes "V-S" and "V-P" cyclically when "9" button is pressed.)
5. Press "CH. ▲ / ▼" buttons on the service remote control unit so that the top and bottom of the monoscope pattern are equal to each other.
6. Turn the power off and on again, using the main power button on the TV unit.

6. H. Position Adjustment

Purpose: To obtain correct horizontal position of screen image.

Symptom of Misadjustment: If H. Position is incorrect, horizontal position of image on the screen may not be properly displayed.

Test Point	Adj. Point	Mode	Input
---	CH. ▲ / ▼ buttons [H-P] mode	RF	Mono-scope
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	90±5%	

Note: Use service remote control unit

1. Operate the unit for at least 20 minutes.
2. Enter the Service mode. (See page 1-6-1.)
3. Input monoscope pattern.
4. Press "8" button on the remote control unit and select "H-P" mode.
5. Press "CH. ▲ / ▼" buttons on the service remote control unit so that the monoscope pattern is 90±5% of display size and the circle is round.
6. Turn the power off and on again, using the main power button on the TV unit.

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7. White Balance Adjustment

Purpose: To mix red, green and blue beams correctly for pure white.

Symptom of Misadjustment: White becomes bluish or reddish.

Test Point	Adj. Point	Mode	Input
Screen	CH. ▲ / ▼ buttons	RF	White Raster (APL 100%)
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator, Color analyzer	See below	
Figure			

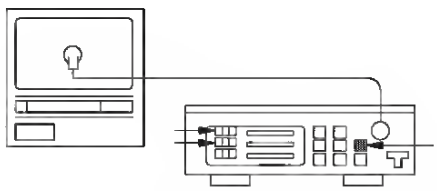

Fig. 3

Note: Use service remote control unit

1. Operate the unit more than 20 minutes.
2. Face the unit to the east. Degauss the CRT using a degaussing coil.
3. Input the White Raster (APL 100%).
4. Set the color analyzer to the CHROMA mode and after zero point calibration, bring the optical receptor to the center on the tube surface (CRT).
5. Enter the Service mode. Press "VOL ▼" button on the service remote control to enter "C/D" mode.
6. Press "4" button on the service remote control unit for Red adjustment. Press "5" button on the service remote control unit for Blue adjustment.
7. In each color mode, press "CH. ▲ / ▼" buttons to adjust values of color.
8. Adjust Red and Blue color so that the temperature becomes 9200K (x: 286 / y: 294) ±3%.
9. At this time, check that horizontal line is white. If not, adjust Cut-off Adjustment until the horizontal line becomes pure white.
10. Turn off and on again to return to normal mode. Receive APL 100% white signal and confirm that Chroma temperatures become 9200K (x: 286 / y: 294) ±3%.

Note: Confirm that Cut Off Adj. is correct after this adjustment, and attempt Cut Off Adj. if needed.

8. Sub-Brightness Adjustment

Purpose: To get proper brightness.

Symptom of Misadjustment: If Sub-Brightness is incorrect, proper brightness cannot be obtained by adjusting the Brightness Control.

Test Point	Adj. Point	Mode	Input
---	CH. ▲ / ▼ buttons	RF	IQW
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	See below	
Figure			

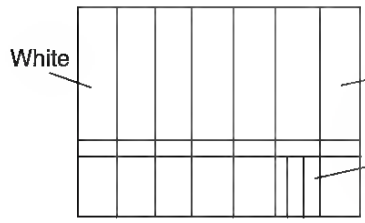

Fig. 4

Note: IQW Setup level --- 7.5 IRE
Use service remote control unit

1. Enter the Service mode. (See page 1-6-1.) Then input IQW signal from RF Input.
2. Press "PICTURE" button on the service remote control unit and select "BRT" mode. (Display changes "BRT," "CNT," "COL," "TNT," "V-TNT," and "SHP" cyclically when "PICTURE" button is pressed.) Press "CH. ▲ / ▼" buttons so that the bar is just visible (See above figure).
3. Turn the power off and on again, using the main power button on the TV unit.

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9. Focus Adjustment

Purpose: Set the optimum Focus.

Symptom of Misadjustment: If Focus Adjustment is incorrect, blurred images are shown on the display.

Test Point	Adj. Point	Mode	Input
---	Focus Control	RF	Mono-scope
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	See below	

Note: Focus VR (FBT) --- Main CBA,
FBT= Fly Back Transformer

1. Operate the unit more than 30 minutes
2. Face the unit to the East and degauss the CRT using a degaussing coil.
3. Input monoscope pattern.
4. Adjust the Focus Control on the FBT to obtain a clear picture.

10. H f_0 Adjustment

Purpose: To get correct horizontal frequency.

Symptom of Misadjustment: If H f_0 adjustment is incorrect, skew distortion will appear on the screen.

Test Point	Adj. Point	Mode	Input
R1583	CH. ▲ / ▼ button ["H-ADJ"] MODE	Video	---
Tape	**M. EQ.**	**Spec.**	
---	Frequency Counter	15.734kHz±300Hz	

Note: R1583 --- Main CBA
Use Service remote control unit.

1. Connect frequency counter to R1583 and ground.
2. Set the unit to the VIDEO mode which is located before CH2 and no input is necessary. Enter the Service mode. (See page 1-6-1.)
3. Operate the unit for at least 20 minutes.
4. Press "2" button on the Service remote control unit and select H-ADJ mode.
5. Press "CH. ▲ / ▼" buttons on the Service remote control unit so that the display will change "0" ~ "7." At this moment, choose display "0" ~ "7" when the frequency counter display is closest to 15.734 kHz±300Hz.
6. Turn the power off and on again, using the main power button on the TV unit.

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11. Cut-off Adjustment

Purpose: To adjust the beam current of R, G, B, and screen voltage.

Symptom of Misadjustment: White color may be reddish, greenish or bluish.

Test Point	Adj. Point	Mode	Input
---	Screen-Control CH. ▲ / ▼ buttons	RF	Black Raster
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	See Reference Notes below.	

Figure

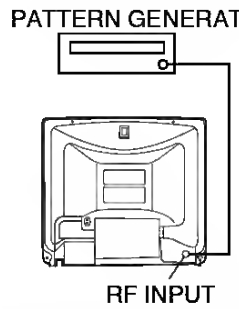

Fig. 5

Note: Screen Control FBT --- Main CBA
FBT= Fly Back Transformer
Use service remote control unit

1. Degauss the CRT and allow the unit to operate for 20 minutes before starting the alignment.
2. Input the Black Raster Signal from RF Input.
3. Enter the Service mode. (See page 1-6-1.)
4. Press "VOL ▼" button on the service remote control unit to enter "C/D" mode. Then press "1." The display will momentarily show "CUT OFF R" (R= Red.) Now there should be a horizontal line across the center of the picture tube. If needed, gradually turn the screen control on the flyback clockwise until the horizontal line appears. Adjust the Red Cut off by pressing the "CH. ▲ / ▼" buttons. Proceed to Step 5 when the Red Cut off adjustment is done.
5. Press the "2" button. The display will momentarily show "CUT OFF G" (G=Green.) Adjust the Green Cut off by pressing the "CH. ▲ / ▼" buttons. Proceed to step 6 when the Green Cut off adjustment is done.
6. Press the "3" button. The display will momentarily show "CUT OFF B" (B=Blue.) Adjust the Blue cut off by pressing the "CH. ▲ / ▼" buttons. When done with steps 4, 5 and 6 the horizontal line should be pure white. If not, then attempt the Cut off adjustment again.

The following 2 adjustments normally are not attempted in the field. They should be done only when replacing the CRT then adjust as a preparation.

12. Purity Adjustment

Purpose: To obtain pure color.

Symptom of Misadjustment: If Color Purity Adjustment is incorrect, large areas of color may not be properly displayed.

Test point	Adj. Point	Mode	Input
---	Deflection Yoke Purity Magnet	---	*Red Color
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	See below.	

Figure

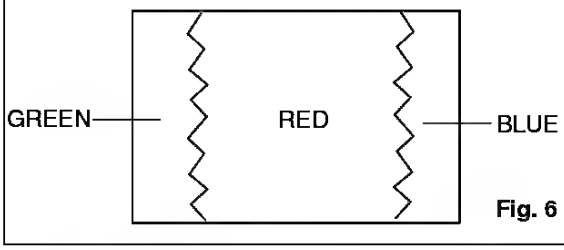

Fig. 6

* This becomes RED COLOR if the 7KEY is pressed while in service mode.

1. Set the unit facing east.
2. Operate the unit for over 30 minutes before adjusting.
3. Fully degauss the unit using an external degaussing coil.
4. Set the unit to the AUX mode which is located before CH2, then input a red raster from video in.
5. Loosen the screw on the Deflection Yoke Clamper and pull the Deflection Yoke back away from the screen. (See Fig. 7.)
6. Loosen the Ring Lock and adjust the Purity Magnets so that a red field is obtained at the center of the screen. Tighten Ring Lock. (See Fig. 6, 7.)
7. Slowly push the Deflection Yoke toward the bell of the CRT and set it where a uniform red field is obtained.
8. Tighten the clamp screw on the Deflection Yoke.

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13. Convergence Adjustment

Purpose: To obtain proper convergence of red, green and blue beams.

Symptom of Misadjustment: If Convergence Adjustment is incorrect, the edge of white letters may have color edges.

Test point	Adj. Point	Mode	Input
---	C.P. Magnet (RB), C.P. Magnet (RB-G), Deflection Yoke	---	Dot Pattern or Crosshatch
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	See below.	

Figure

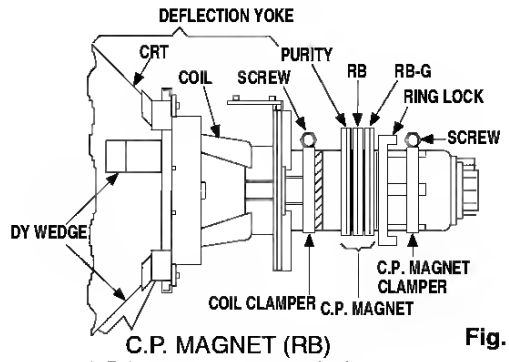

Fig. 7

C.P. MAGNET (RB)

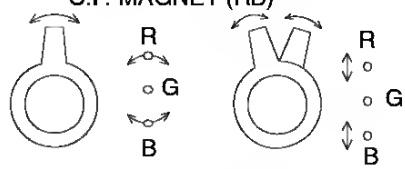

Fig. 8

C.P. MAGNET (RB-G)

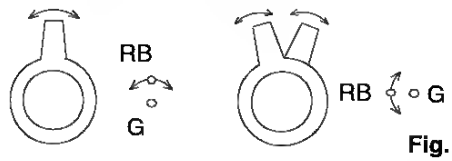

Fig. 9

1. Set the unit to the AUX mode which is located before CH2, then input a dot or crosshatch pattern.
2. Loosen the Ring Lock and align red with blue dots or crosshatch at the center of the screen by rotating (RB) C.P. Magnets. (See Fig. 8.)
3. Align red / blue with green dots at the center of the screen by rotating (RB-G) C.P. Magnet. (See Fig. 9.)
4. Fix the C.P. Magnets by tightening the Ring Lock.
5. Remove the DY Wedges and slightly tilt the Deflection Yoke horizontally and vertically to obtain the best overall convergence.
6. Fix the Deflection Yoke by carefully inserting the DY Wedges between CRT and Deflection Yoke.

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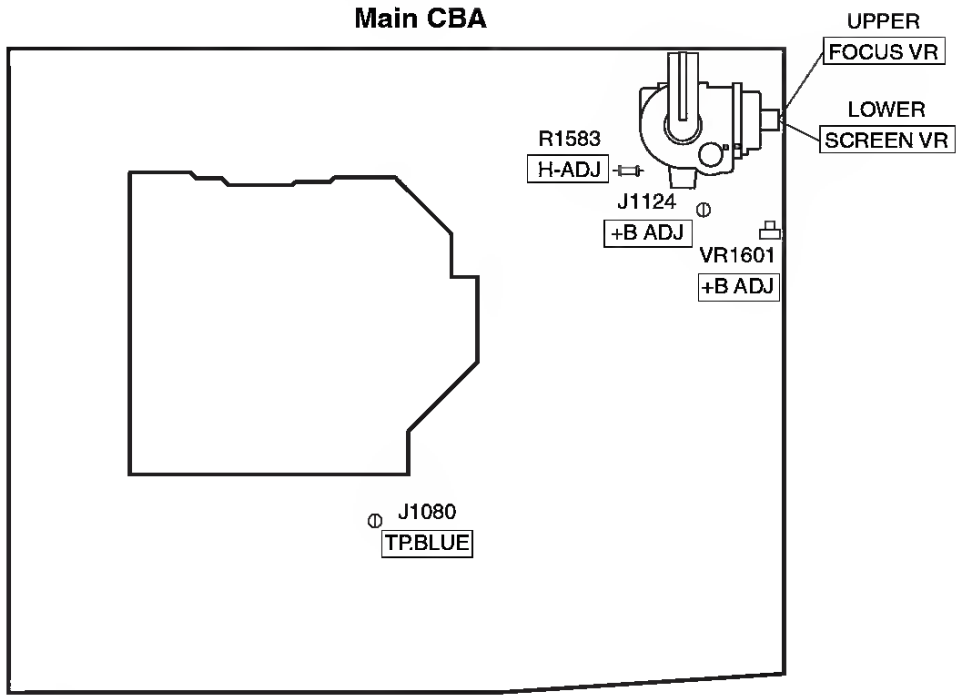
Adjustment Points and Test Points



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HOW TO INITIALIZE THE TV/DVD

To put the program back at the factory-default, initialize the TV/DVD as the following procedure.

< DVD Section >

1. Press [1], [2], [3], [4], and [DISPLAY] buttons on the remote control unit in that order.
   Fig. g appears on the screen.

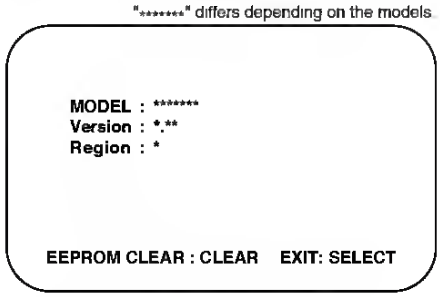

Fig. g

2. Press [CLEAR] button on the remote control unit.
   Fig. h appears on the screen.

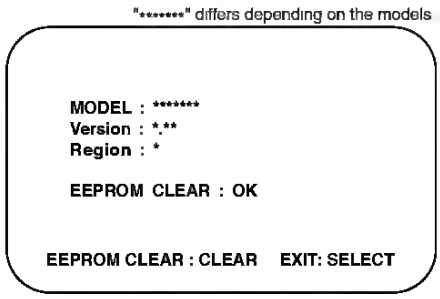

Fig. h

   When "OK" appears on the screen, the factory default will be set.
3. To exit this mode, press [CH. ▲ / ▼] or [SELECT] button to go to TV mode, or press [STANDBY-ON] button to turn the power off.

< TV Section >

1. Use the service remote control unit.
2. Turn the power on. (Use main power on the TV unit.)
3. Press [DISC MENU] button on the service remote control unit to enter the Service mode. (Refer to "How to enter the Service mode" on page 1-6-1.)
4. Confirm that OSD indication on the four corners on TV screen changes from on and off light indication to red by pressing a [DISPLAY] button. (It is necessary for one or two seconds.)
5. Turn the power off by pressing main power button on the TV unit, and unplug the AC cord from the AC outlet.

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FIRMWARE RENEWAL MODE

1. Turn the power on and press [SELECT] button on the remote control unit to put the TV/DVD into DVD mode. Then remove the disc on the tray.
   (It is possible to move to F/W version up mode only when the TV/DVD is in DVD mode with the tray open.)
2. To put the TV/DVD into F/W version up mode, press [9], [8], [7], [6], and [MODE] buttons on the remote control unit in that order.
   Fig. a appears on the screen.

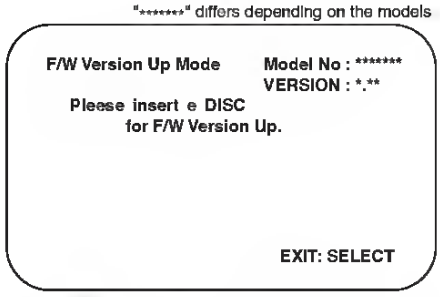

Fig. a Version Up Mode Screen

The TV/DVD can also enter the version up mode with the tray open. In this case, Fig. a will be shown on the screen while the tray is open.

3. Load the disc for version up.
4. The TV/DVD enters the F/W version up mode automatically. Fig. c appears on the screen. If you enter the F/W for different models, "Disc Error" will appear on the screen, then the tray will open automatically.

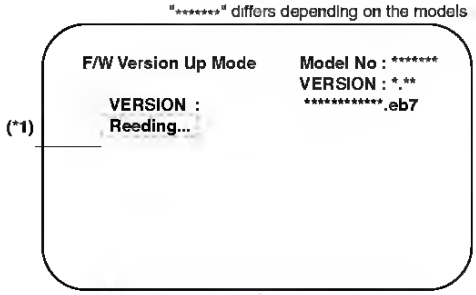

Fig. c Programming Mode Screen

The appearance shown in (*1) of Fig. c is described as follows:

No.	Appearance	State
1	Reading..	Sending files into the memory
2	Erasing...	Erasing previous version data
3	Programming...	Writing new version data

5. After programming is finished, the tray opens automatically. Fig. e appears on the screen and the checksum will be shown in (*2).

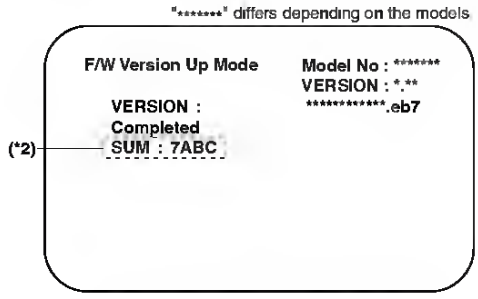

Fig. e Completed Program Mode Screen

At this time, no button is available.

6. Remove the disc on the tray.
7. Press [CH. ▲ / ▼] button on the unit to go to TV mode, or press [STANDBY-ON] button on the unit to turn the power off.
8. Press [SELECT] button on the remote control unit to put the TV/DVD into DVD mode again.
9. Press [1], [2], [3], [4], and [DISPLAY] buttons on the remote control unit in that order.
   Fig. g appears on the screen.

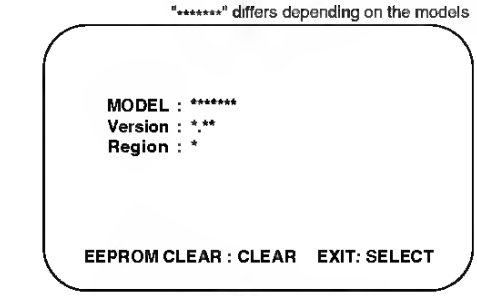

Fig. g

10. Press [CLEAR] button on the remote control unit.
    Fig. h appears on the screen.

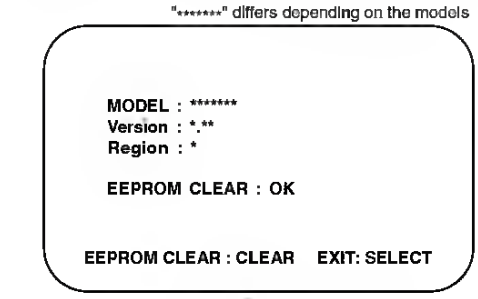

Fig. h

When "OK" appears on the screen, the factory default will be set. Then the firmware renewal mode is complete.

11. To exit this mode, press [CH. ▲ / ▼] or [SELECT] button to go to TV mode, or press [STANDBY-ON] button to turn the power off.

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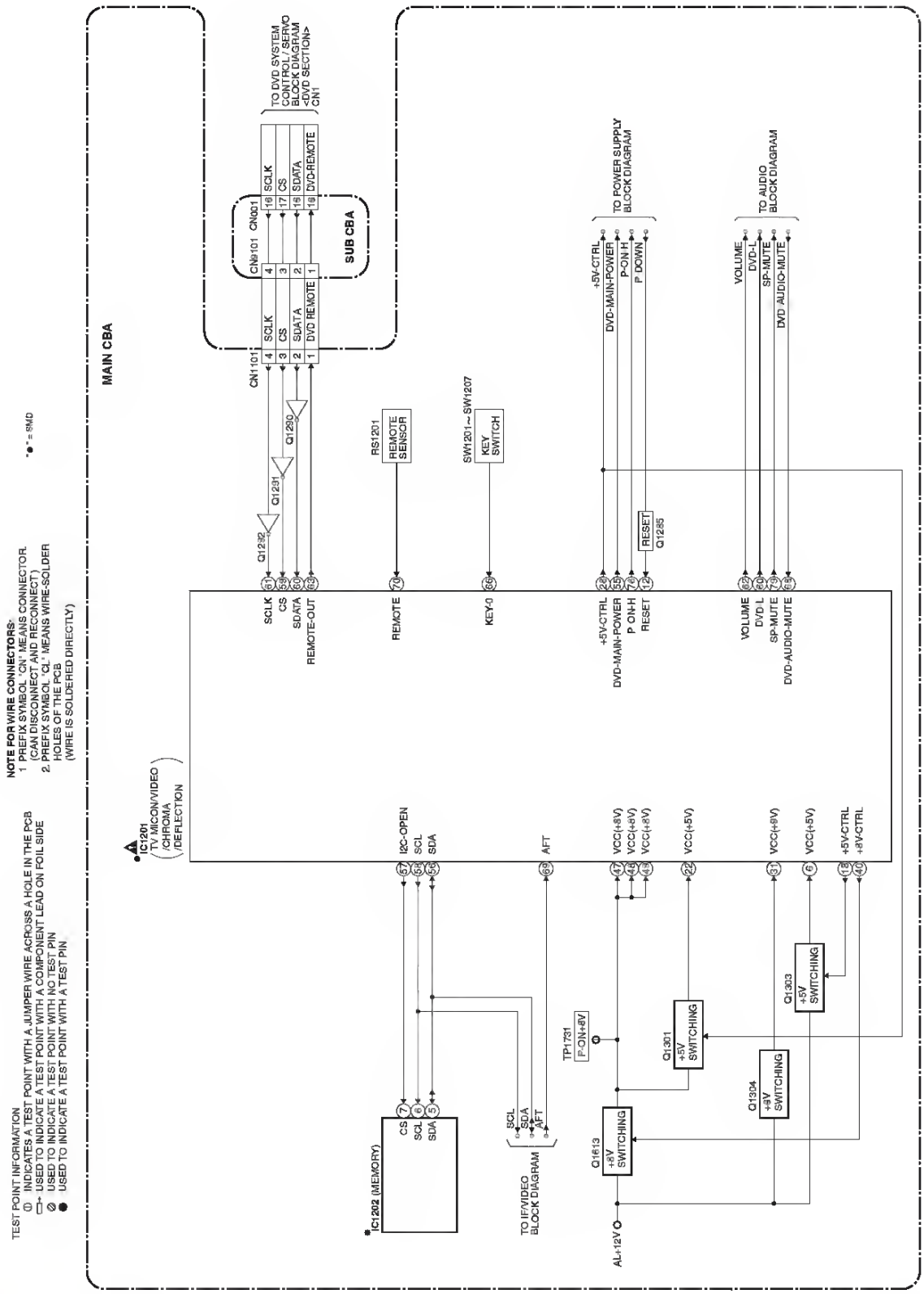
BLOCK DIAGRAMS <TV Section>

System Control Block Diagram



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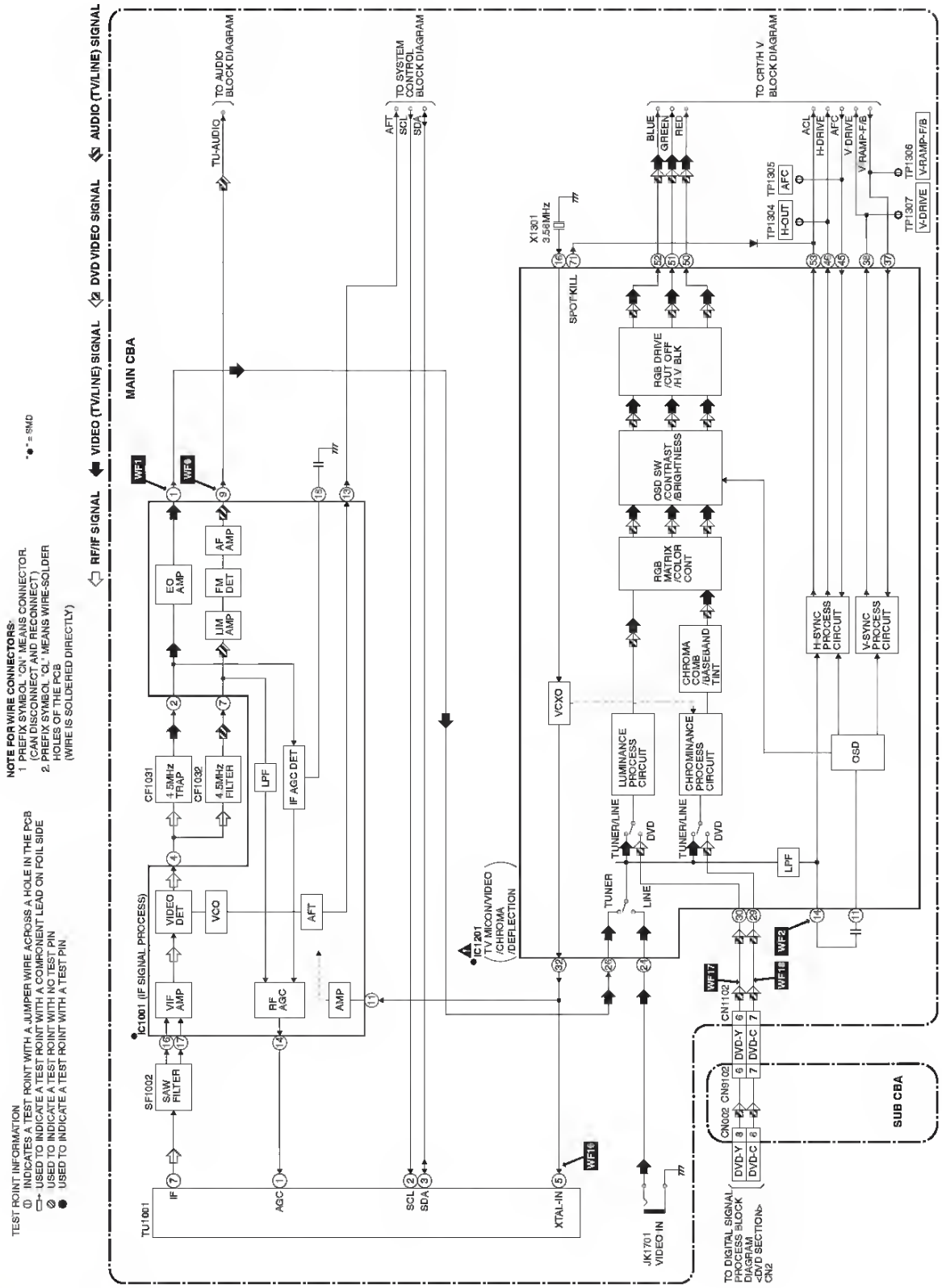
IF/Video Block Diagram



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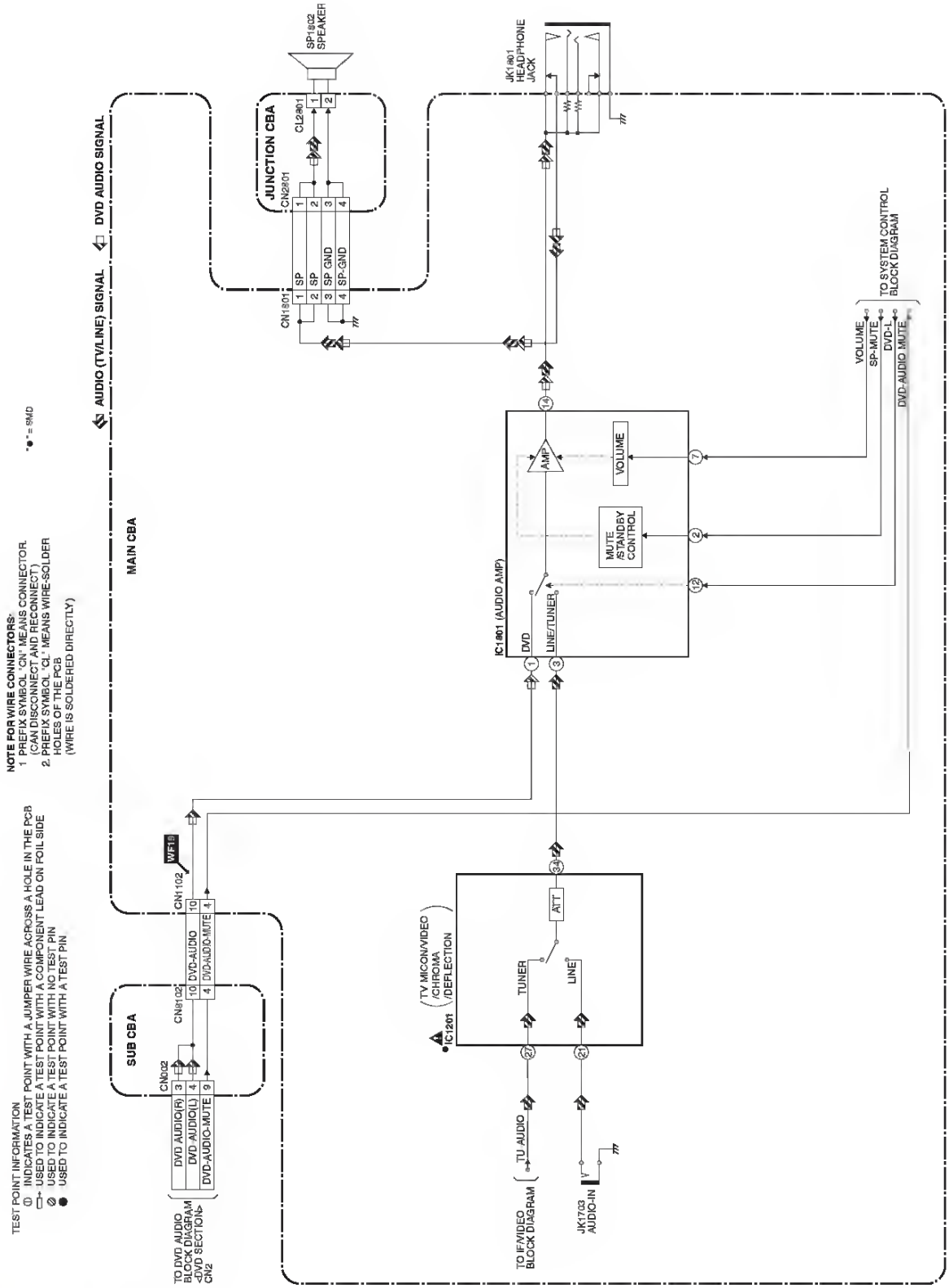
Audio Block Diagram



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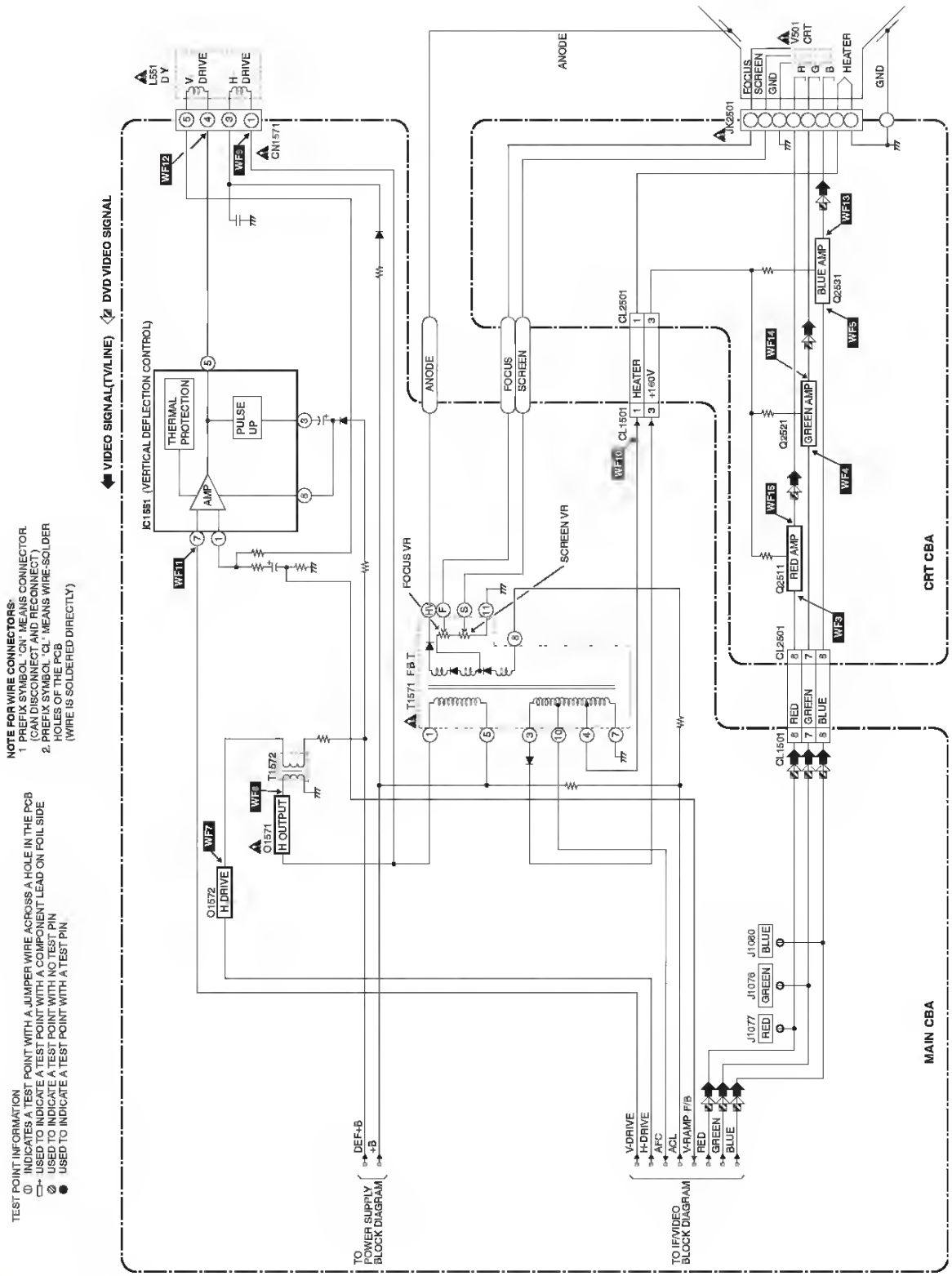
CRT/H.V. Block Diagram



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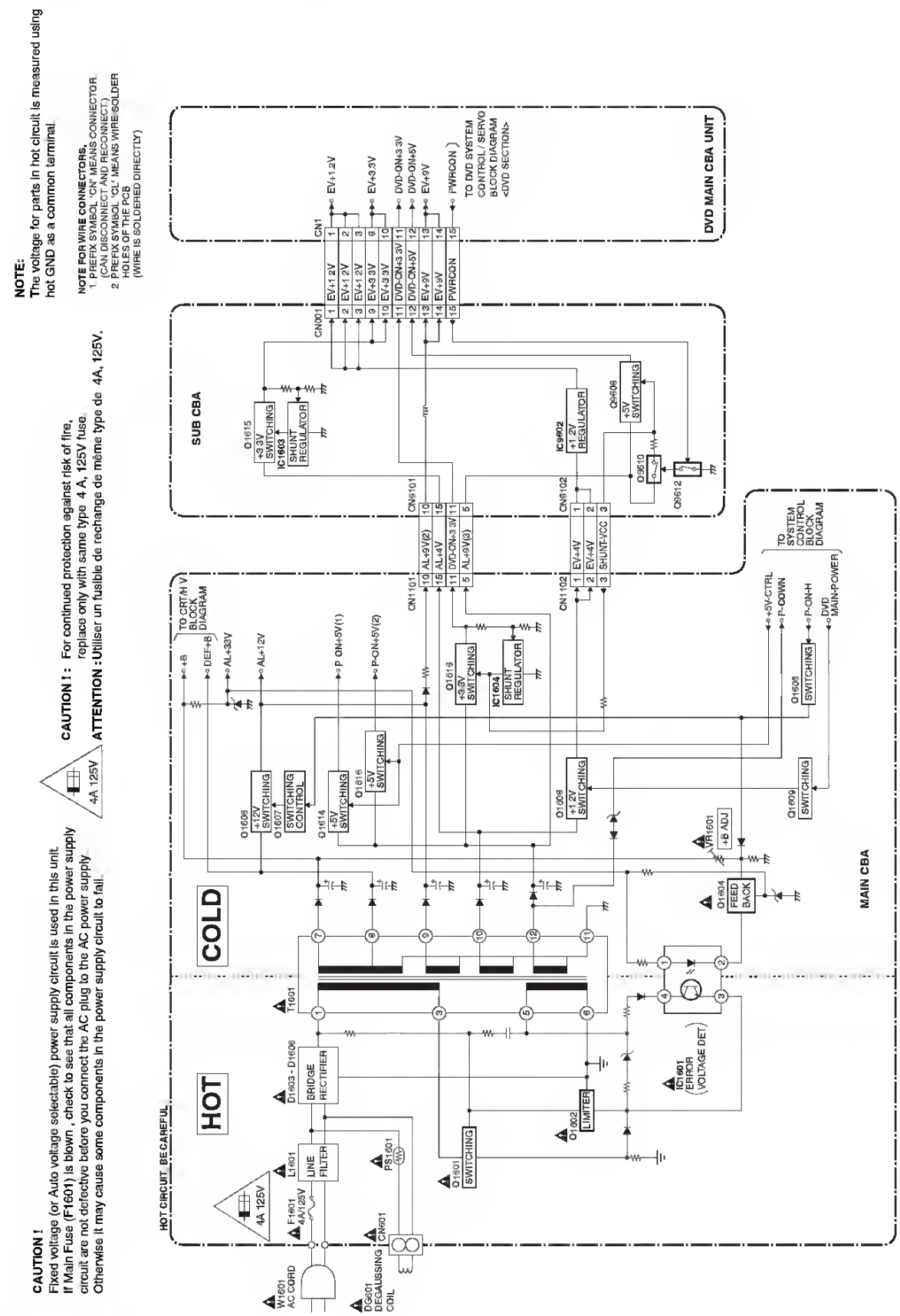
Power Supply Block Diagram



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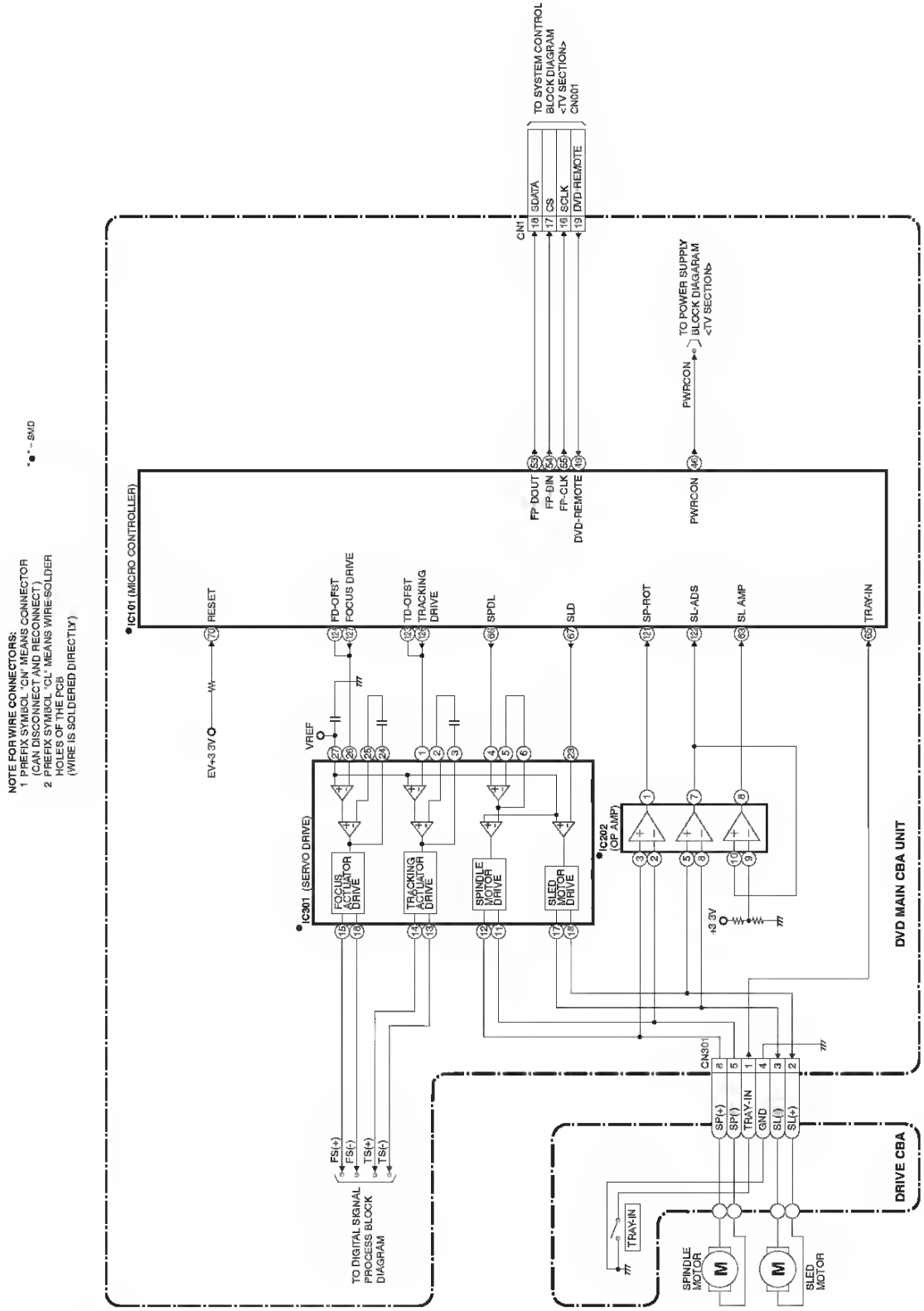
BLOCK DIAGRAMS < DVD Section >

DVD System Control / Servo Block Diagram



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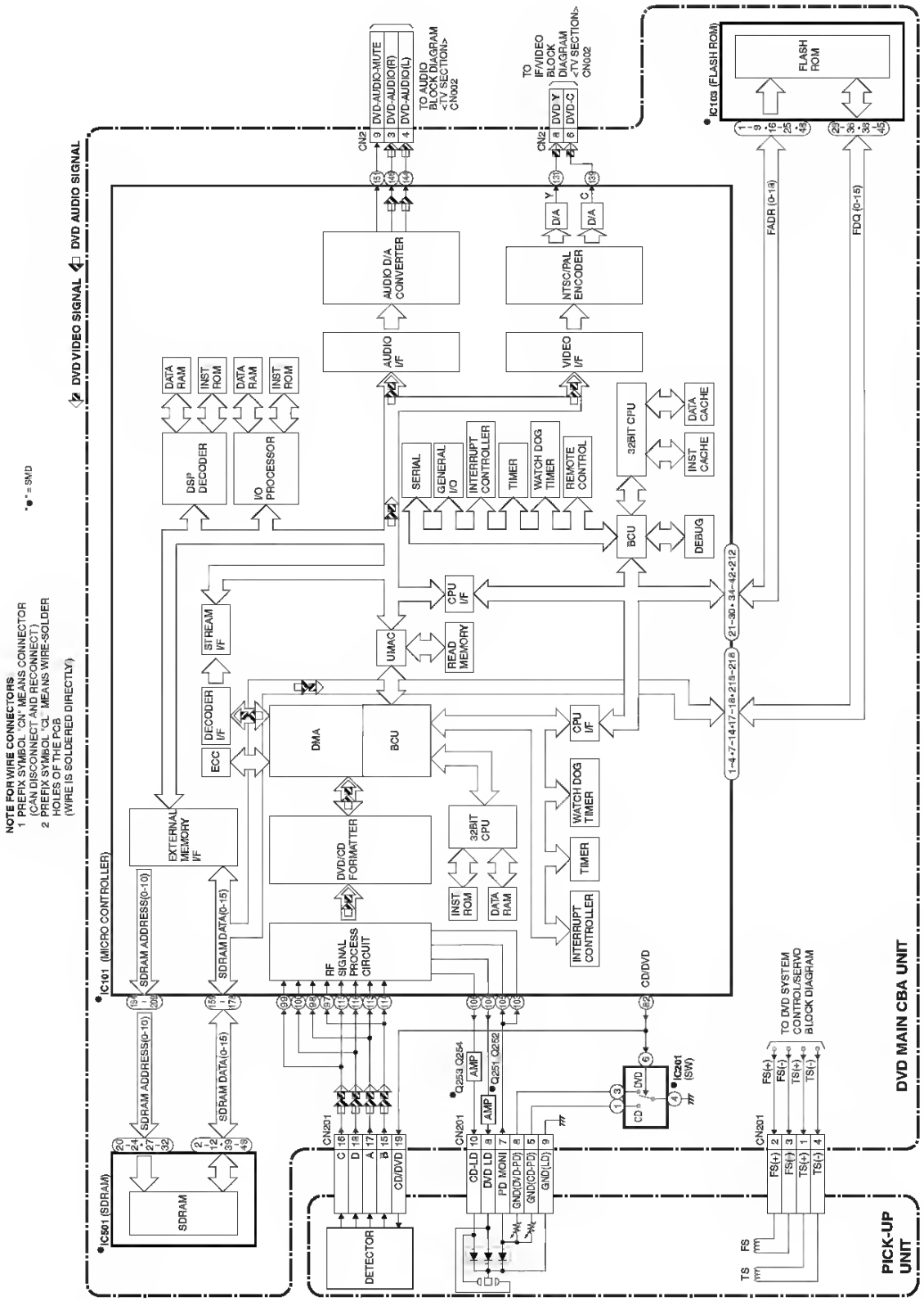
Digital Signal Process Block Diagram



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SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

Standard Notes

WARNING

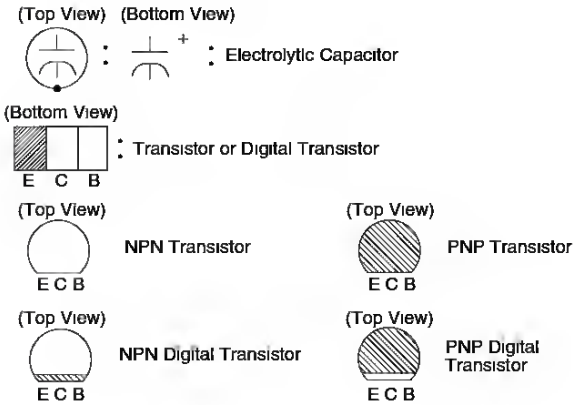
Critical components having special safety characteristics are identified with a ⚠ by the Ref. No. in the parts list and enclosed within a broken line* (where several critical components are grouped in one area) along with the safety symbol ⚠ on the schematics or exploded views.
Use of substitute replacement parts which do not have the same specified safety characteristics may create shock, fire or other hazards.
Under no circumstances should the original design be modified or altered without written permission from Philips Consumer Electronics Company. Philips assumes no liability, express or implied, arising out of any unauthorized modification of design. Servicer assumes all liability.
* Broken Line : ▬ ▬ ▬ ▬ ▬

Capacitor Temperature Markings

Mark	Capacity change rate	Standard temperature	Temperature range
(B)	±10%	20°C	-25~+85°C
(F)	+30 - 80%	20°C	–25~+85°C
(SR)	±15%	20°C	–25~+85°C
(Z)	±22.5%	20°C	–25~+85°C

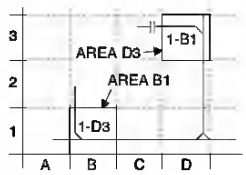
Capacitors and transistors are represented by the following symbols.

< PCB Symbols >



Notes:

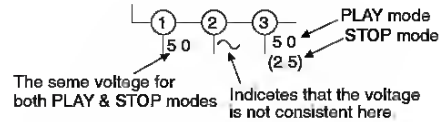
1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.
3. How to read converged lines.



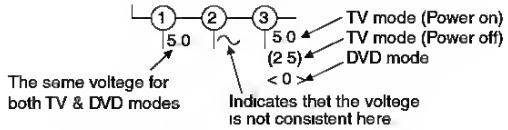
Examples:
(1). "1-D3" means that line number "1" goes to the line number "1" of the area "D3".
(2). "1-B1" means that line number "1" goes to the line number"1" of the area "B1".

4. All resistance values are indicated in ohms ($K=10^3$, $M=10^6$).
5. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
6. All capacitance values are indicated in μF ($P=10^{-6}$ μF).
7. All voltages are DC voltages unless otherwise specified.
8. Voltage indications on the schematics are as shown below.

< DVD Section > Unit: Volts

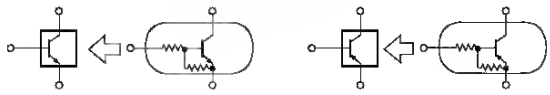


< TV Section >



< Schematic Diagram Symbols >

Digital Transistor



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Main 1/4 Schematic Diagram Parts Location Guide

Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position
CAPACITORS		CAPACITORS		RESISTORS		RESISTORS	
C1204	C-1	C1348	B-2	R1225	A-3	R1328	E-2
C1205	C-1	C1352	D-4	R1229	C-4	R1330	F-2
C1206	C-1	C1613	E-3	R1230	C-4	R1334	D-4
C1207	C-1	C1704	D-1	R1231	B-2	R1335	D-4
C1208	B-1	DIODES		R1232	C-1	R1336	D-4
C1209	C-1	D1302	E-2	R1233	C-4	R1338	F-3
C1219	A-4	D1303	E-2	R1234	C-4	R1339	F-2
C1220	A-4	D1309	C-4	R1235	C-4	R1346	B-3
C1222	C-1	ICS		R1236	B-2	R1347	D-4
C1223	C-1	IC1201	B-2	R1237	C-4	R1619	F-3
C1224	D-1	IC1202	A-4	R1240	C-1	R1694	E-3
C1225	A-3	COILS		R1241	C-1	R1701	E-1
C1231	B-1	L1301	E-1	R1242	B-3	R1704	E-1
C1232	B-2	L1302	E-1	R1243	A-2	R1706	E-1
C1233	B-1	TRANSISTORS		R1244	A-2	SWITCHES	
C1234	C-1	Q1285	B-1	R1293	B-1	SW1201	A-1
C1302	D-1	Q1301	E-3	R1294	B-1	SW1202	B-1
C1304	E-1	Q1303	E-1	R1295	A-1	SW1203	B-1
C1306	E-1	Q1304	E-2	R1301	A-2	SW1204	B-1
C1307	E-2	Q1613	E-3	R1302	B-4	SW1205	B-1
C1308	E-3	RESISTORS		R1303	D-4	SW1206	A-1
C1309	E-2	R1201	B-3	R1304	D-4	SW1207	C-1
C1310	E-2	R1202	A-1	R1305	D-4	CRYSTAL OSCILLATORS	
C1311	E-2	R1203	A-1	R1306	D-4	X1301	D-1
C1313	F-2	R1204	B-1	R1308	E-3	MISCELLANEOUS	
C1314	E-3	R1205	B-1	R1309	E-3	JK1701	E-1
C1316	E-2	R1206	B-1	R1311	D-1	JK1703	E-1
C1317	E-3	R1207	B-1	R1312	E-2	RS1201	A-3
C1318	D-3	R1216	C-1	R1317	F-3	TEST POINTS	
C1319	D-4	R1220	B-2	R1320	C-4	TP1304	E-4
C1320	D-4	R1221	B-2	R1321	E-1	TP1305	E-3
C1324	E-4	R1222	B-2	R1322	E-1	TP1306	F-3
C1325	B-3	R1223	B-3	R1323	D-1	TP1307	E-4
C1335	E-1	R1224	C-4	R1327	E-2	TP1731	F-3

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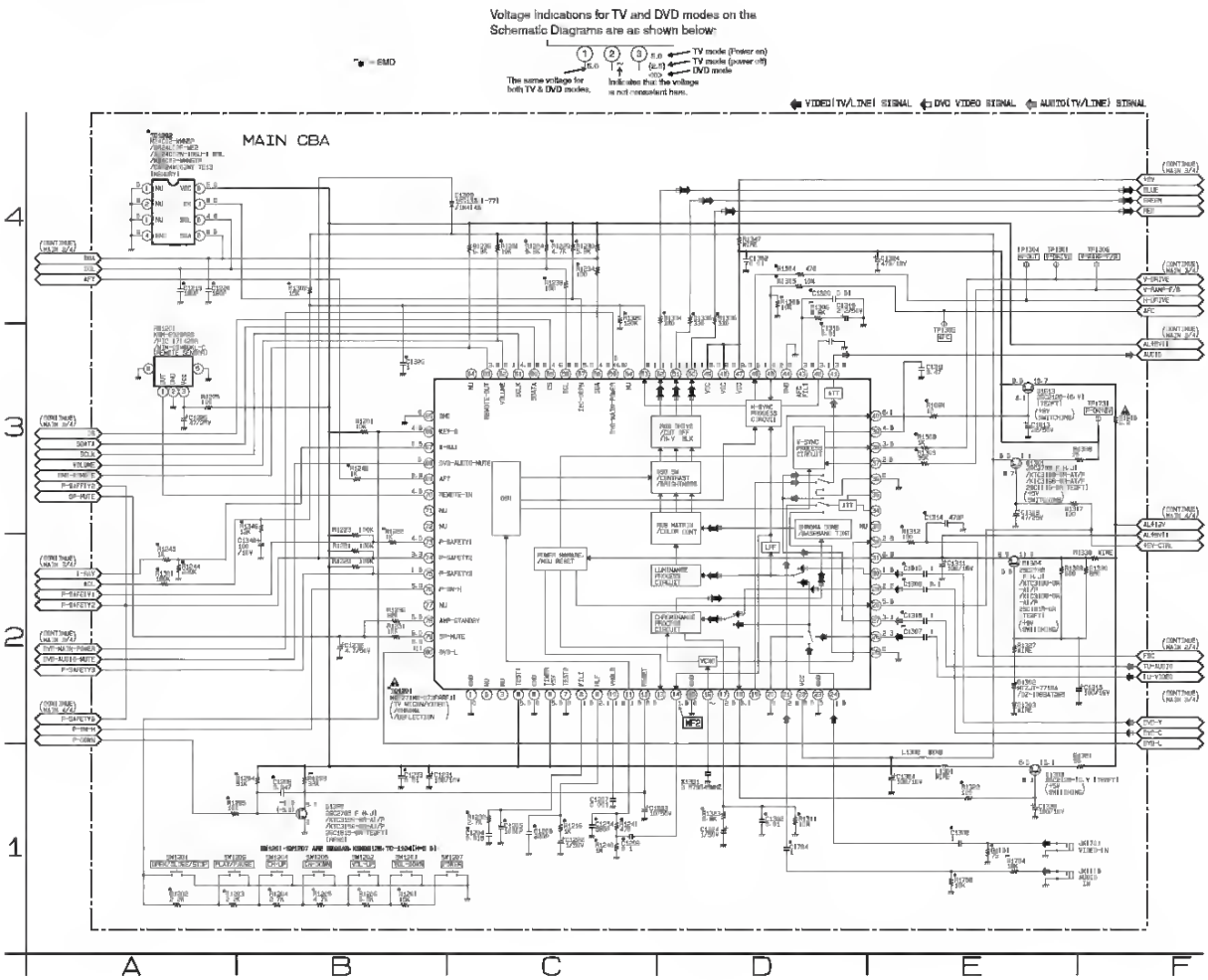
Main 1/4 Schematic Diagram < TV Section >



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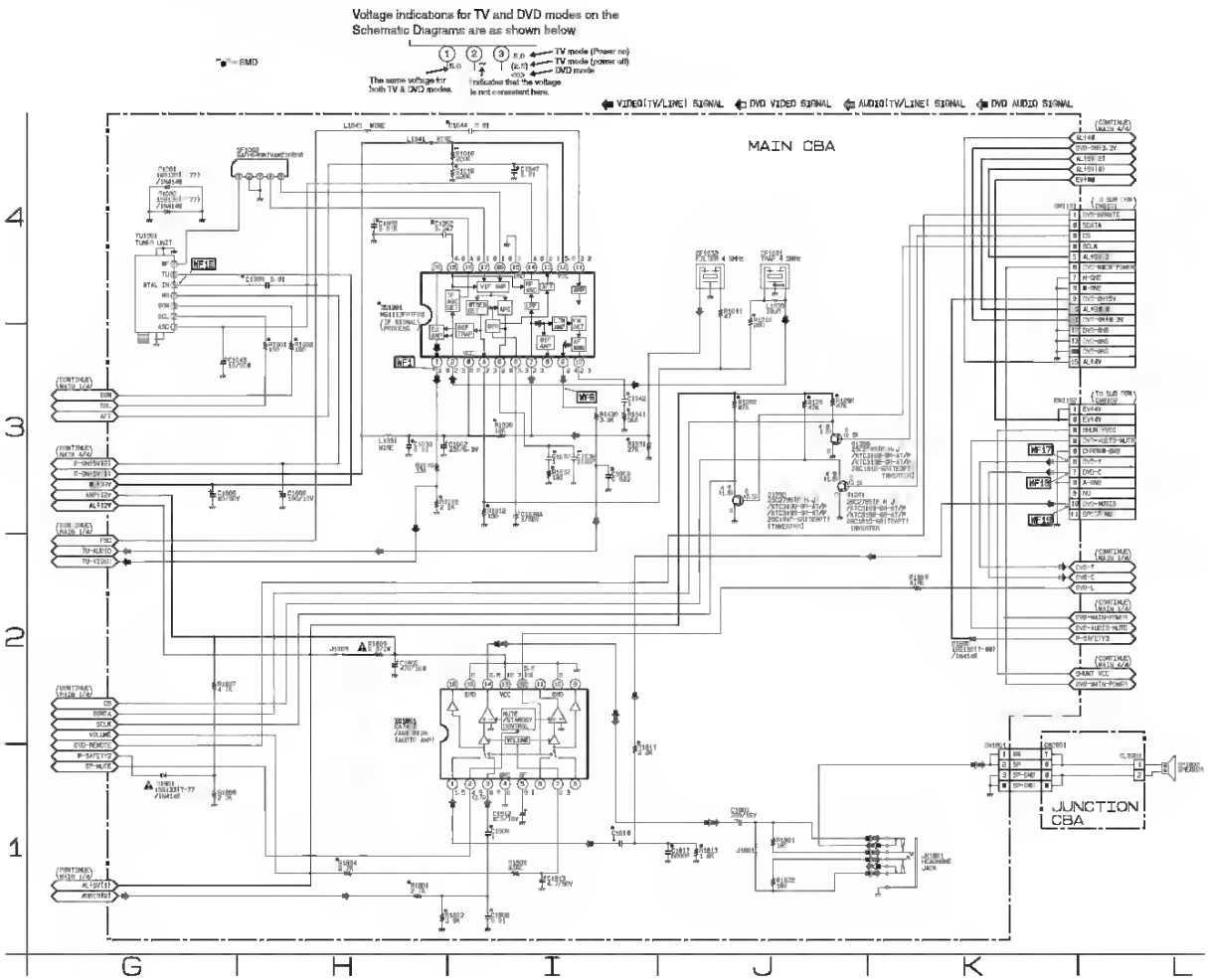
Main 2/4 & Junction Schematic Diagram < TV Section >



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Main 2/4 Schematic Diagram Parts Location Guide

Ref No.	Position
CAPACITORS	
C1002	H-3
C1003	H-4
C1006	G-3
C1008	H-3
C1009	I-3
C1033	H-3
C1036	I-3
C1037	I-3
C1039A	I-3
C1042	I-3
C1044	I-4
C1047	I-4
C1048	G-3
C1052	H-4
C1053	H-4
C1803	J-1
C1805	H-2
C1808	I-1
C1809	I-1
C1812	I-1
C1813	I-1
C1815	I-1
C1817	J-1
CONNECTORS	
CN1101	K-4
CN1102	K-3

Ref No.	Position
CONNECTORS	
CN1801	K-1
DIODES	
D1001	G-4
D1002	G-4
D1650	K-2
D1801	G-1
ICS	
IC1001	H-4
IC1801	H-2
COILS	
L1031	H-3
L1033	J-4
L1041	H-4
L1043	H-4
TRANSISTORS	
Q1290	J-3
Q1291	J-3
Q1292	J-3
RESISTORS	
R1001	H-3
R1002	H-3
R1010	J-4
R1011	J-4
R1012	I-3
R1016	H-3
R1018	I-4

Ref No.	Position
RESISTORS	
R1019	I-4
R1022	H-3
R1030	I-3
R1031	I-3
R1037	I-3
R1041	I-3
R1801	H-1
R1802	H-1
R1805	I-1
R1806	K-2
R1807	G-2
R1808	G-1
R1809	H-2
R1811	I-1
R1813	J-1
R1821	J-1
R1822	J-1
R1854	H-1
MISCELLANEOUS	
CF1031	J-4
CF1032	J-4
JK1801	K-1
SF1002	H-4
TU1001	G-4

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Main 3/4 & CRT Schematic Diagram Parts Location Guide

MAIN 3/4 SCHEMATIC DIAGRAM PARTS LOCATION GUIDE

Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position
CAPACITORS		DIODES		RESISTORS		RESISTORS	
C1552	N-3	D1572	O-2	R1558	N-3	R1584	O-2
C1553	M-2	D1584	P-2	R1559	N-3	R1586	O-2
C1555	N-3	D1590	N-2	R1560	M-2	R1587	P-3
C1556	N-3	D1591	N-2	R1561	M-2	R1588	O-3
C1558	N-3	D1595	M-3	R1562	N-2	R1589	O-2
C1559	N-3	D1596	M-3	R1563	N-2	R1590	O-2
C1560	M-3	D1597	N-2	R1564	O-3	R1592	N-2
C1571	O-3	D1598	O-2	R1565	N-3	R1593	N-2
C1574	O-2	IC		R1566	N-3	R1594	N-2
C1577	N-3	IC1551	M-4	R1567	N-3	R1595	N-2
C1578	N-3	COILS		R1568	N-3	R1596	M-3
C1580	O-2	L1559	O-3	R1569	N-3	R1597	N-2
C1584	O-2	TRANSISTORS		R1571	N-2	R1598	N-2
C1591	N-2	Q1571	N-2	R1573	N-4	R1599	N-1
C1592	N-1	Q1572	N-2	R1574	O-3	MISCELLANEOUS	
C1593	N-2	RESISTORS		R1575	O-3	T1571	O-3
C1594	O-3	R1290	J-3	R1576	N-2	T1572	N-2
CONNECTORS		R1291	J-3	R1577	N-2	TEST POINTS	
CL1501	P-2	R1292	J-3	R1578	N-3	J1076	O-1
CN1571	N-4	R1430	I-3	R1579	N-3	J1077	O-1
DIODES		R1544	N-2	R1580	N-3	J1080	O-1
D1319	N-2	R1551	M-3	R1581	N-3		
D1552	N-3	R1552	N-3	R1582	N-2		
D1571	O-3	R1556	N-3	R1583	O-2		

CRT SCHEMATIC DIAGRAM PARTS LOCATION GUIDE

Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position
CAPACITORS		TRANSISTORS		RESISTORS		RESISTORS	
C2501	Q-2	Q2511	Q-2	R2526A	Q-2	R2532	Q-1
C2511	Q-1	Q2521	Q-2	R2517	Q-2	R2535	Q-1
C2521	Q-1	Q2531	Q-1	R2520	Q-2	R2536	Q-2
C2531	Q-1	RESISTORS		R2521	Q-1	R2537	Q-2
CONNECTORS		R2510	Q-2	R2522	Q-1	MISCELLANEOUS	
CL2501	P-2	R2511	Q-1	R2525	Q-1	JK2501	R-2
CN2505	R-2	R2512	Q-1	R2527	Q-2		
COIL		R2515	Q-1	R2530	Q-2		
L2501	P-2	R2516A	Q-2	R2531	Q-1		

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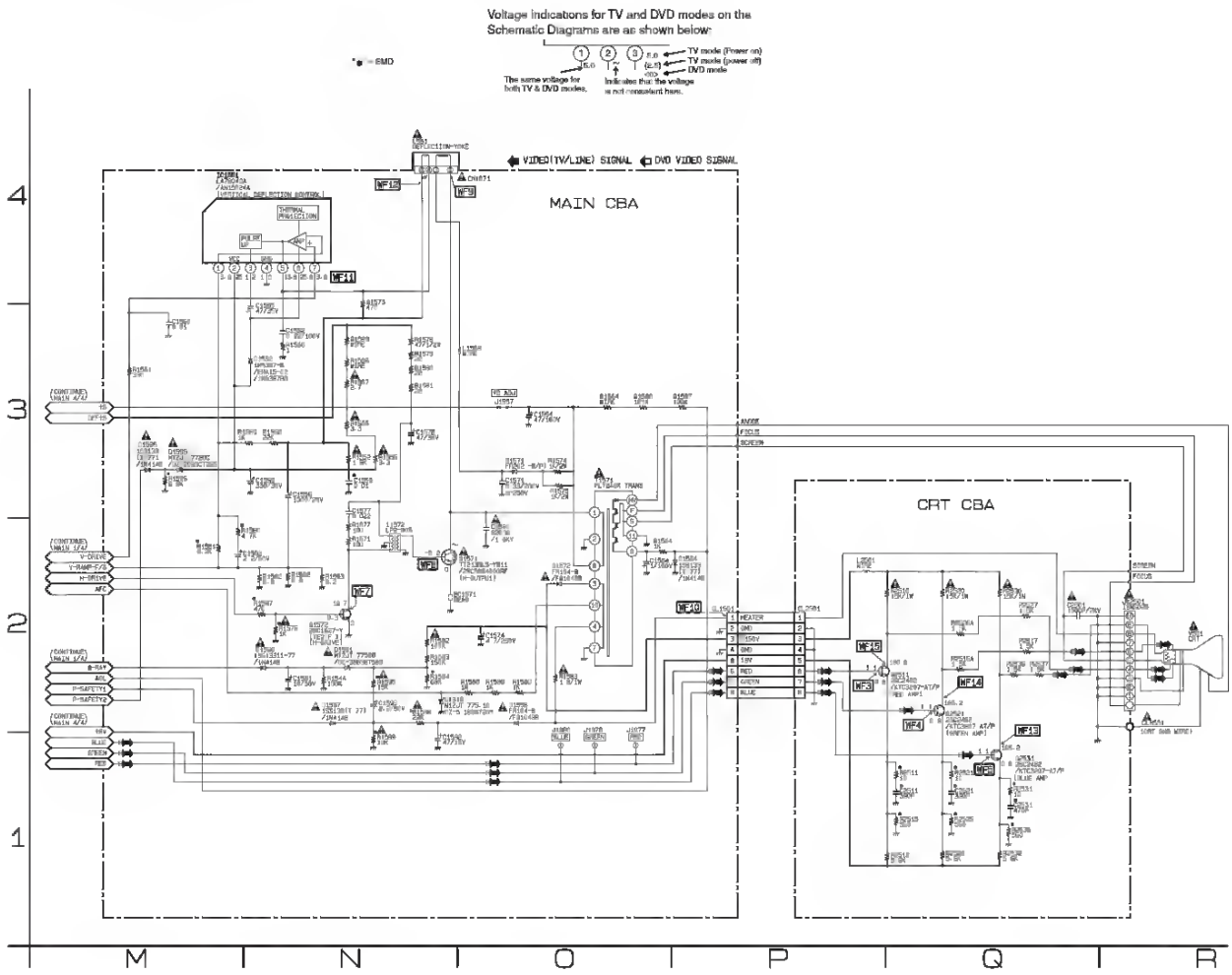
Main 3/4 & CRT Schematic Diagram < TV Section >



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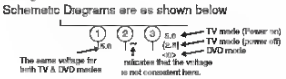
Main 4/4 Schematic Diagram <TV Section>

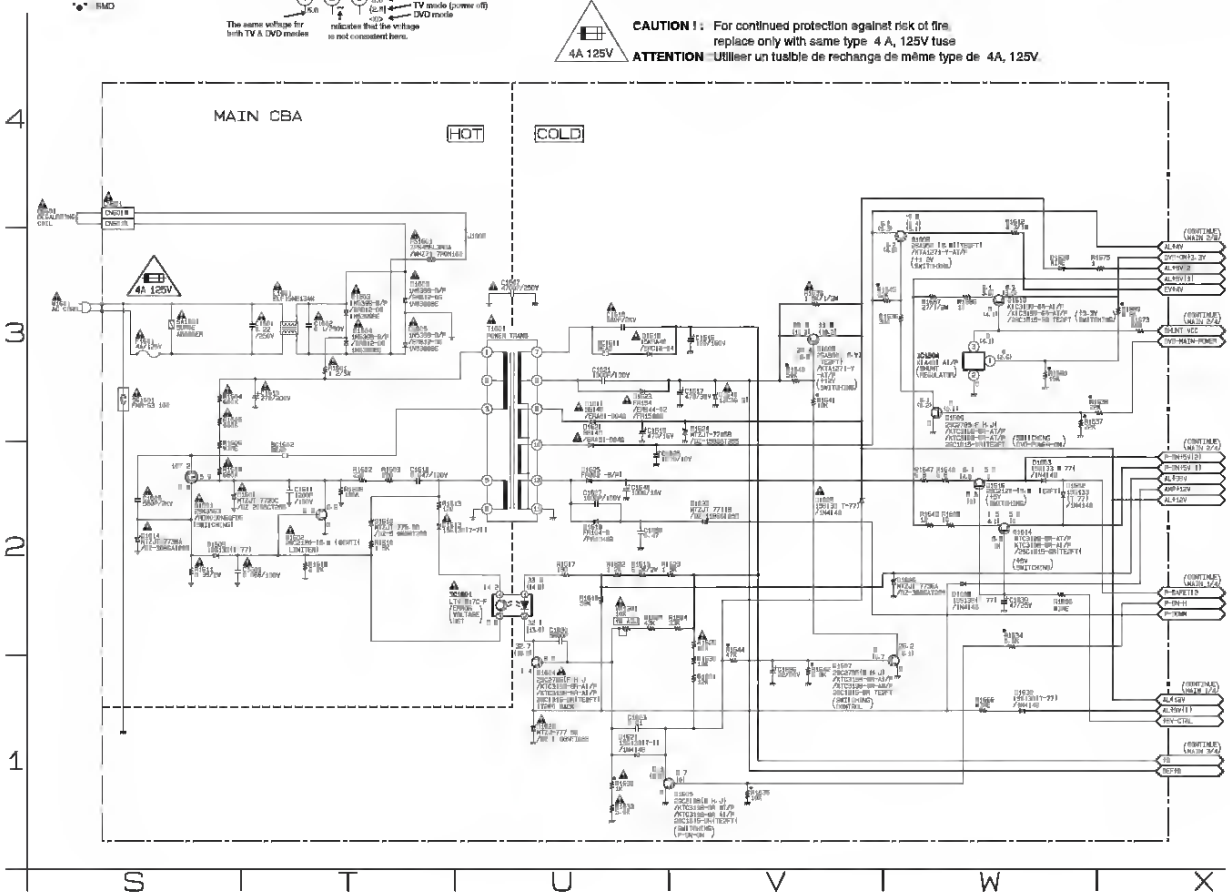
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1601) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

NOTE
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

Voltage indications for TV and DVD modes on the Schematic Diagrams are as shown below


TV mode (Power on)
TV mode (power off)
DVD mode
The same voltage for both TV & DVD modes
indicates that the voltage is not consistent here.

CAUTION ! : For continued protection against risk of fire, replace only with same type 4 A, 125V fuse
ATTENTION : Utiliser un fusible de rechange de même type de 4A, 125V.



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Main 4/4 Schematic Diagram Parts Location Guide

Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position
CAPACITORS		DIODES		TRANSISTORS		RESISTORS	
C1601	T-3	D1613	T-2	Q1609	W-3	R1637	W-3
C1602	T-3	D1614	S-2	Q1614	W-2	R1638	W-3
C1605	S-2	D1617	U-3	Q1616	W-2	R1639	V-3
C1607	U-3	D1618	U-3	Q1619	W-3	R1640	V-3
C1609	T-2	D1619	U-2	RESISTORS		R1641	V-3
C1610	T-3	D1620	U-1	R1601	T-3	R1642	V-1
C1611	T-2	D1621	U-1	R1602	T-2	R1644	V-1
C1612	T-2	D1623	U-3	R1603	T-2	R1645	W-3
C1615	U-3	D1624	V-3	R1604	S-3	R1647	W-2
C1616	V-3	D1625	U-2	R1605	S-3	R1648	W-2
C1617	V-3	D1626	W-2	R1606	S-2	R1649	W-2
C1619	U-3	D1627	U-3	R1607	S-2	R1650	W-2
C1621	U-3	D1629	V-2	R1608	T-2	R1654	W-2
C1623	U-1	D1632	W-1	R1610	T-2	R1666	W-1
C1625	U-2	D1633	V-2	R1611	S-2	R1673	X-3
C1626	V-1	D1634	W-2	R1612	W-3	R1675	X-3
C1627	U-2	D1639	W-3	R1613	T-2	R1686	W-3
C1630	U-2	D1640	V-3	R1614	T-2	R1687	W-3
C1639	W-2	D1652	W-2	R1615	U-2	R1689	W-3
C1640	U-2	D1653	W-2	R1617	U-2	R1690	W-3
C1650	U-2	ICS		R1618	U-2	VARIABLE RESISTOR	
CONNECTORS		IC1601	U-2	R1622	U-2	VR1601	U-2
CN601	S-4	IC1604	W-3	R1623	U-2	MISCELLANEOUS	
CN601A	S-4	COIL		R1624	U-2	BC1571	N-2
CN601B	S-4	L1601	T-3	R1625	U-2	BC1602	T-2
DIODES		TRANSISTORS		R1629	V-2	BC1611	U-3
D1603	T-3	Q1601	S-2	R1630	V-1	F1601	S-3
D1604	T-3	Q1602	T-2	R1631	V-1	PS1601	T-3
D1605	T-3	Q1604	U-1	R1632	U-1	SA1601	S-3
D1606	T-3	Q1605	U-1	R1633	U-1	SG1601	S-3
D1607	S-2	Q1606	V-3	R1634	W-2	T1601	U-3
D1609	S-2	Q1607	W-1	R1635	V-1		
D1610	T-2	Q1608	W-3	R1636	W-3		

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CRT CBA Parts Location Guide

Ref No.	Position	Ref No.	Position
CAPACITORS		RESISTORS	
C2501	A-1	R2515	B-1
C2511	B-1	R2516A	B-2
C2521	B-1	R2526A	B-2
C2531	B-1	R2517	B-2
CONNECTORS		R2520	B-1
CL2501	A-1	R2521	B-1
CN2505	A-1	R2522	A-1
COIL		R2525	B-1
L2501	B-1	R2527	B-2
TRANSISTORS		R2530	B-2
Q2511	B-1	R2531	B-1
Q2521	B-1	R2532	A-1
Q2531	B-1	R2535	B-1
RESISTORS		R2536	B-2
R2510	B-2	R2537	A-2
R2511	B-1	MISCELLANEOUS	
R2512	A-1	JK2501	A-1

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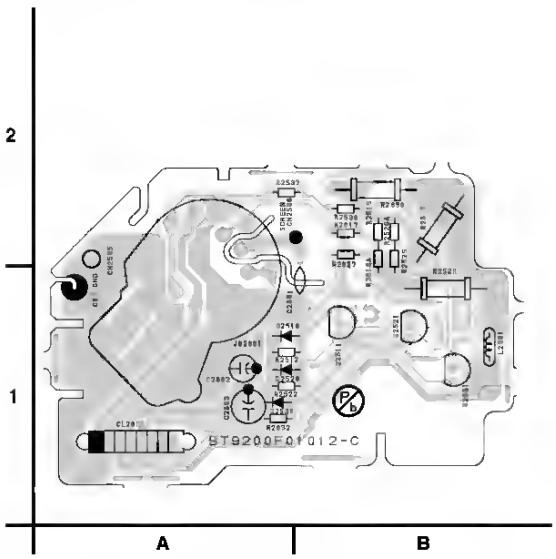
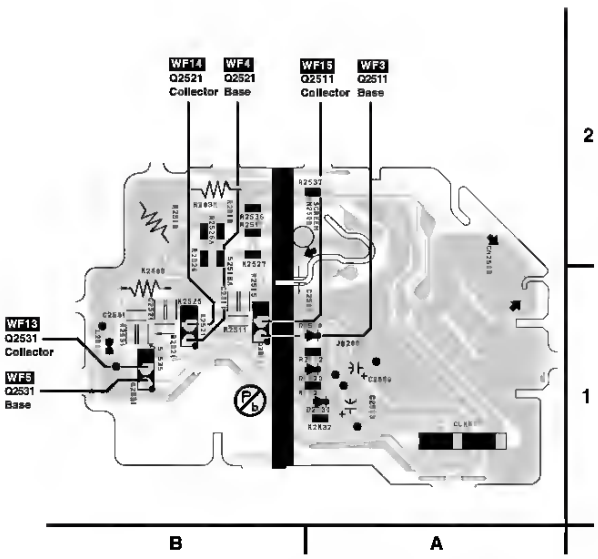
CRT CBA Top View < TV Section >



CRT CBA Bottom View < TV Section >



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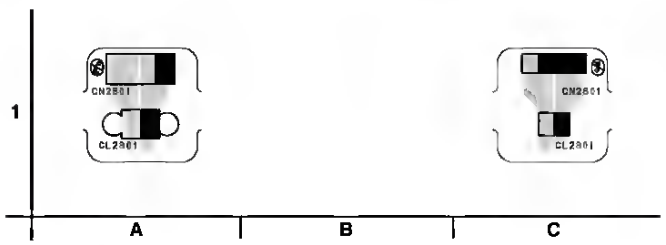
Junction CBA Top & Bottom View < TV Section >



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Main CBA Parts Location Guide

Ref No	Position	Ref No	Position	Ref No	Position	Ref No	Position	Ref No	Position	Ref No	Position	Ref No	Position	Ref No	Position	Ref No	Position
CAPACITORS		CAPACITORS		CAPACITORS		DIODES		TRANSISTORS		RESISTORS		RESISTORS		RESISTORS		SWITCHES	
C1002	E-1	C1324	C-1	C1605	B-5	D1623	E-3	Q1606	D-4	R1241	B-1	R1564	F-4	R1617	F-4	R1811	C-5
C1003	E-1	C1325	C-2	C1609	B-5	D1624	E-2	Q1607	D-4	R1242	C-1	R1565	D-5	R1618	F-4	R1813	C-5
C1006	F-1	C1335	D-1	C1609	A-5	D1625	E-3	Q1608	E-4	R1243	C-1	R1566	D-5	R1619	D-2	R1821	A-1
C1008	F-1	C1348	C-1	C1612	B-5	D1626	F-4	Q1609	E-4	R1244	C-1	R1567	D-5	R1622	F-4	R1822	A-1
C1009	E-1	C1352	B-1	C1613	A-5	D1627	E-3	Q1613	D-2	R1290	C-1	R1568	D-4	R1623	F-4	R1854	C-1
C1033	E-1	C1552	D-5	C1615	B-5	D1629	D-4	Q1614	D-1	R1291	C-2	R1569	D-4	R1624	F-4	SWITCHES	
C1036	E-1	C1553	C-5	C1617	C-5	D1632	D-1	Q1616	D-1	R1292	D-1	R1571	D-5	R1625	F-4	SW1201	A-2
C1037	E-1	C1555	C-5	CONNECTORS		D1633	D-2	Q1619	E-3	R1293	B-1	R1573	D-5	R1629	F-4	SW1202	A-4
C1039A	E-1	C1556	C-5	CL1501	E-4	D1634	D-3	RESISTORS		R1294	A-1	R1574	F-4	R1630	F-4	SW1203	A-4
C1042	E-1	C1558	C-5	CN601A	E-2	D1639	E-3	R1001	F-1	R1295	D-1	R1575	F-4	R1631	F-4	SW1204	A-4
C1044	E-1	C1559	C-5	CN601B	E-2	D1640	E-4	R1002	F-1	R1301	C-2	R1576	D-5	R1632	F-4	SW1205	A-4
C1047	E-1	C1560	D-5	CN1101	E-3	D1650	D-1	R1010	E-1	R1302	C-1	R1577	D-5	R1633	F-4	SW1206	A-3
C1048	E-1	C1571	E-5	CN1102	E-4	D1652	D-1	R1011	E-1	R1303	C-1	R1578	D-5	R1634	F-4	SW1207	A-5
C1052	E-1	C1574	E-4	CN1571	E-5	D1653	D-1	R1012	E-1	R1304	C-2	R1579	D-5	R1635	F-4	VARIABLE RESISTOR	
C1053	F-1	C1577	D-5	CN1801	B-1	D1801	A-4	R1016	F-1	R1305	C-1	R1580	D-5	R1636	E-4	VR1601	F-4
C1204	B-1	C1578	D-5	DIODES		ICS		R1018	E-1	R1306	B-2	R1581	E-5	R1637	E-4	CRYSTAL OSCILLATORS	
C1205	B-1	C1580	D-5	D1001	E-1	IC1001	E-1	R1019	E-1	R1308	A-2	R1582	C-5	R1638	E-4	X1301	B-1
C1206	B-1	C1584	F-4	D1002	E-1	IC1201	C-1	R1022	F-1	R1309	A-2	R1583	E-5	R1639	D-4	MISCELLANEOUS	
C1207	B-1	C1591	D-4	D1302	B-1	IC1202	C-2	R1030	E-1	R1311	B-1	R1584	F-5	R1640	D-4	BC1571	E-5
C1208	B-1	C1592	E-4	D1303	B-1	IC1551	C-5	R1031	E-1	R1312	B-2	R1586	C-5	R1641	D-4	BC1602	F-3
C1209	B-1	C1593	E-4	D1309	A-2	IC1601	F-4	R1037	E-1	R1317	A-2	R1587	F-4	R1642	D-4	BC1611	E-4
C1219	C-1	C1594	F-4	D1319	C-5	IC1604	E-3	R1041	E-1	R1320	C-1	R1588	F-4	R1644	D-4	CF1031	E-1
C1220	C-1	C1601	F-2	D1552	C-5	IC1801	B-5	R1201	A-2	R1321	D-1	R1589	C-5	R1645	E-4	CF1032	E-1
C1222	B-1	C1602	E-2	D1571	E-5	COILS		R1202	A-2	R1322	A-1	R1590	C-5	R1647	D-1	F1601	F-2
C1223	B-1	C1605	F-3	D1572	E-4	L1031	E-1	R1203	A-3	R1323	B-1	R1592	E-4	R1648	D-1	JK1701	A-2
C1224	A-1	C1607	F-3	D1584	F-5	L1033	E-1	R1204	A-4	R1327	B-2	R1593	E-4	R1649	D-1	JK1703	A-1
C1225	A-3	C1609	F-3	D1590	D-4	L1041	E-1	R1205	A-4	R1328	B-2	R1594	E-4	R1650	D-1	JK1601	A-1
C1231	B-1	C1610	F-2	D1591	D-4	L1043	E-1	R1206	A-4	R1330	B-2	R1595	E-4	R1654	D-1	FS1601	E-2
C1232	B-1	C1611	F-2	D1595	C-5	L1301	D-1	R1207	A-5	R1334	C-2	R1596	D-4	R1666	D-1	RS1201	A-3
C1233	C-1	C1612	F-3	D1596	D-4	L1302	A-1	R1216	B-1	R1335	C-2	R1597	C-5	R1673	E-4	SA1601	F-2
C1234	B-1	C1613	D-2	D1597	D-4	L1559	E-5	R1220	C-1	R1336	C-2	R1598	E-4	R1675	E-3	SF1002	E-1
C1302	B-1	C1615	F-4	D1598	E-4	L1601	F-2	R1221	C-1	R1338	A-2	R1599	E-4	R1686	E-3	BG1601	F-1
C1304	B-1	C1616	F-4	D1603	E-2	TRANSISTORS		R1222	C-1	R1339	D-1	R1601	E-2	R1687	E-3	T1571	E-5
C1306	B-1	C1617	E-3	D1604	E-2	Q1285	B-1	R1223	C-1	R1346	C-1	R1602	F-3	R1689	E-3	T1572	D-5
C1307	A-1	C1619	E-3	D1605	E-2	Q1290	C-1	R1224	D-1	R1347	D-1	R1603	F-3	R1690	E-3	T1601	F-3
C1308	A-1	C1621	E-3	D1606	F-2	Q1291	C-1	R1225	A-2	R1430	E-1	R1604	F-3	R1694	D-2	TU1001	F-1
C1309	C-2	C1623	F-4	D1607	F-2	Q1292	C-1	R1229	C-2	R1544	D-4	R1605	F-3	R1701	A-1	TEST POINTS	
C1310	B-2	C1625	E-3	D1609	F-3	Q1301	A-1	R1230	D-1	R1551	D-5	R1605	F-3	R1704	A-1	J1076	C-2
C1311	B-2	C1626	D-4	D1610	F-3	Q1303	D-1	R1231	B-1	R1552	D-5	R1607	F-3	R1706	A-1	J1077	C-2
C1313	B-2	C1627	F-3	D1613	F-3	Q1304	B-2	R1232	B-1	R1556	D-5	R1608	F-3	R1801	A-5	J1080	C-2
C1314	B-2	C1630	F-4	D1614	F-3	Q1571	E-5	R1233	C-1	R1558	C-5	R1610	F-3	R1802	A-5	TP1304	C-5
C1316	A-2	C1639	E-1	D1617	E-3	Q1572	D-5	R1234	C-1	R1559	C-5	R1611	F-3	R1805	C-1	TP1305	B-5
C1317	B-2	C1640	E-3	D1616	E-4	Q1601	F-3	R1235	C-1	R1560	C-5	R1612	E-4	R1806	C-1	TP1306	C-5
C1318	B-2	C1650	E-2	D1619	E-2	Q1602	F-3	R1236	B-1	R1561	C-5	R1613	F-3	R1807	A-4	TP1307	C-5
C1319	C-2	C1704	A-1	D1620	F-4	Q1604	F-4	R1237	C-1	R1562	C-5	R1614	F-3	R1808	A-4	TP1731	B-2
C1320	B-1	C1803	B-5	D1621	F-4	Q1605	F-4	R1240	B-1	R1563	C-5	R1615	F-4	R1809	D-2		

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Main CBA Top View < TV Section >

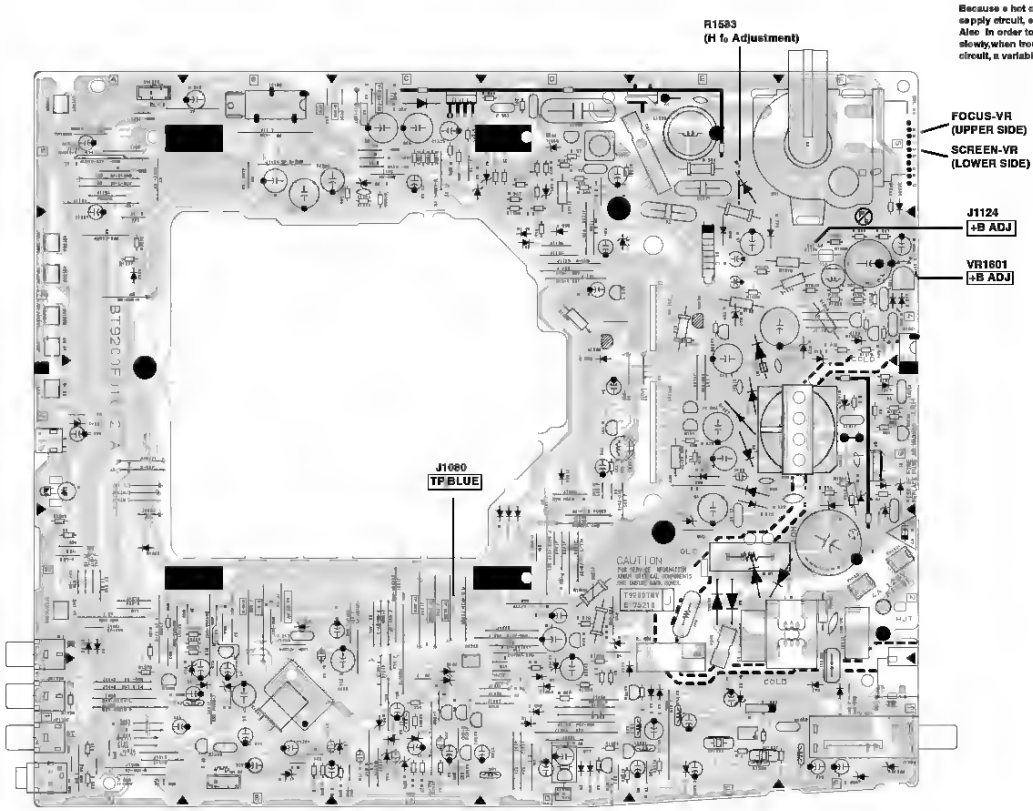
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1401) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

4A 125V

CAUTION ! For continued protection against risk of fire replace only with same type 4 A, 125V fuse
ATTENTION ! Utiliser un fusible de rechange de même type de 4A, 125V

NOTE
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

Because a hot chassis ground is present in the power supply circuit, an isolation transformer must be used. Also in order to have the ability to increase the input slowly,when troubleshooting this type power supply circuit, a variable isolation transformer is required.



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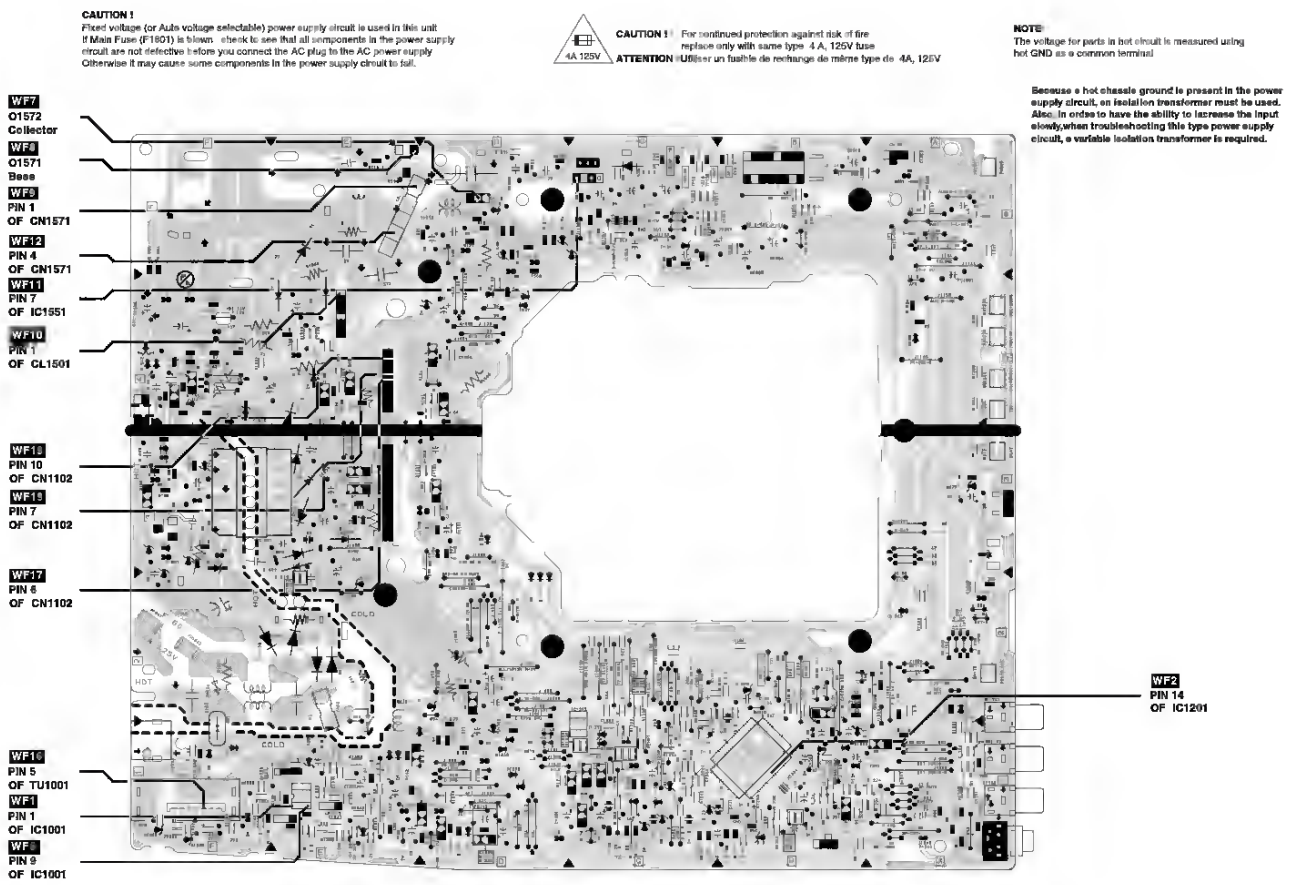
Main CBA Bottom View <TV Section >


CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit
If Main Fuse (F1801) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply
Otherwise it may cause some components in the power supply circuit to fail.
4A 125V
CAUTION ! For continued protection against risk of fire replace only with same type 4 A, 125V fuse
ATTENTION Utiliser un fusible de rechange de même type de 4A, 125V
NOTE
The voltage for parts in hot circuit is measured using hot GND as a common terminal
Because a hot chassis ground is present in the power supply circuit, an isolation transformer must be used. Also, in order to have the ability to increase the input slowly,when troubleshooting this type power supply circuit, a variable isolation transformer is required.
WF7
Q1572
Collector
WF8
Q1571
Base
WF9
PIN 1
OF CN1571
WF12
PIN 4
OF CN1571
WF11
PIN 7
OF IC1551
WF10
PIN 1
OF CL1501
WF16
PIN 10
OF CN1102
WF15
PIN 7
OF CN1102
WF17
PIN 8
OF CN1102
WF18
PIN 5
OF TU1001
WF1
PIN 1
OF IC1001
WF5
PIN 9
OF IC1001
WF2
PIN 14
OF IC1201

BT9200F01012-A

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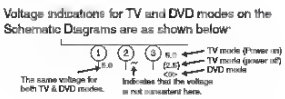
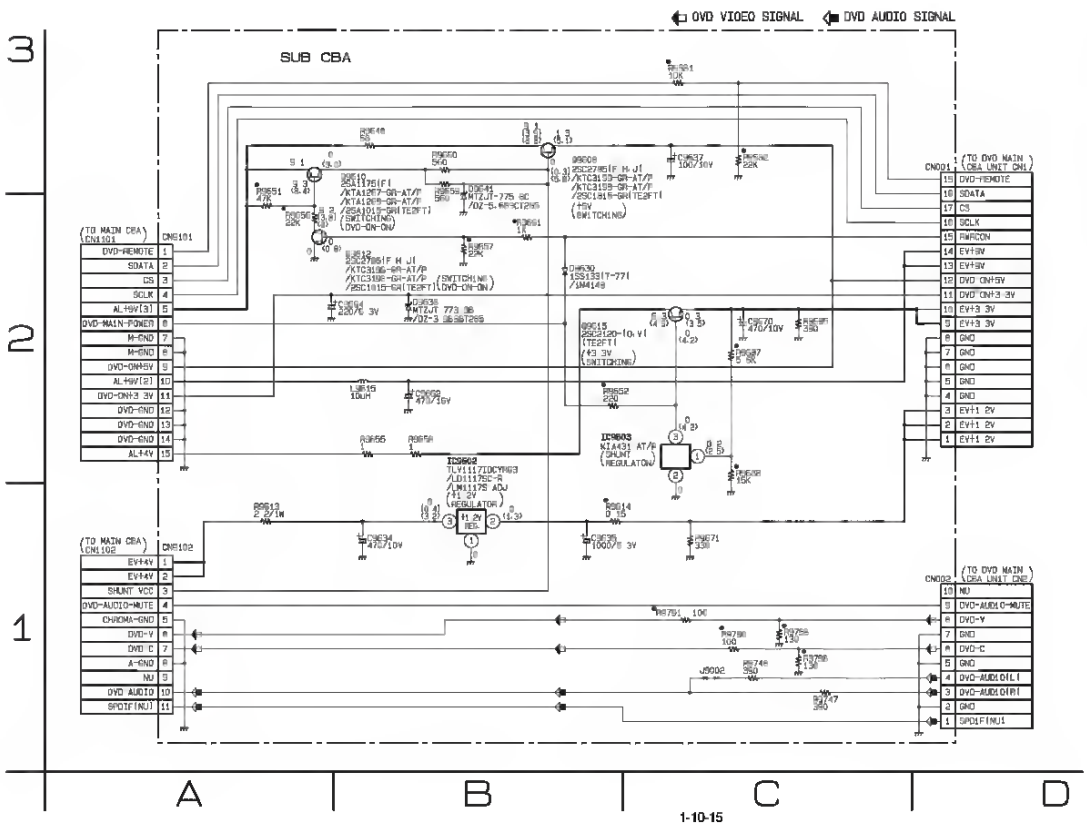
Sub Schematic Diagram <TV Section>

Voltage indications for TV and DVD modes on the Schematic Diagrams are as shown below:


TV mode (Power on)
TV mode (power off)
DVD mode
The same voltage for both TV & DVD modes.
Indicates that the voltage is not consistent here.



SUB SCHEMATIC DIAGRAM PARTS LOCATION

Ref No.	Position	Ref No.	Position
CAPACITORS		RESISTORS	
C9634	B-1	R9613	A-1
C9635	B-1	R9614	B-1
C9637	C-3	R9646	B-3
C9662	B-2	R9651	A-2
C9664	B-2	R9652	B-2
C9670	C-2	R9655	B-2
CONNECTORS		R9656	B-2
CN001	D-3	R9657	B-2
CN002	D-1	R9658	B-2
CN9101	A-2	R9659	B-3
CN9102	A-1	R9660	B-3
DIODES		R9661	B-2
D9630	B-2	R9671	C-1
D9638	B-2	R9681	C-3
D9641	B-2	R9682	C-3
ICS		R9687	C-2
IC9602	B-1	R9686	C-2
IC9603	C-2	R9695	C-2
ODIL		R9747	C-1
L9615	B-2	R9748	C-1
TRANSISTORS		R9788	C-1
Q9608	B-3	R9789	C-1
Q9610	B-3	R9790	C-1
Q9612	B-2	R9791	C-1
Q9615	C-2		

T8201SCSUB

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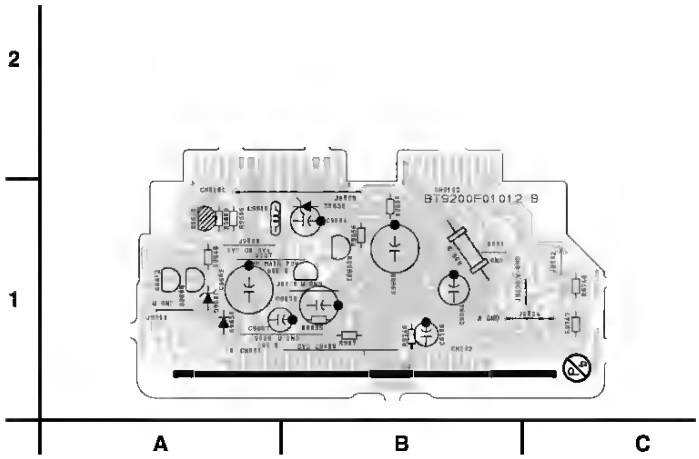
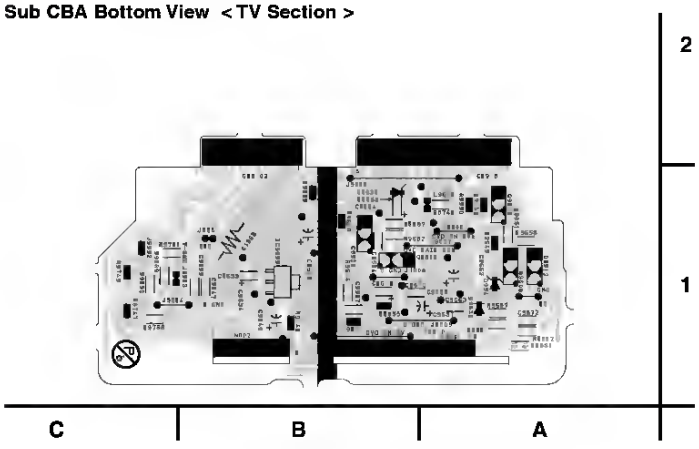
Sub CBA Top View <TV Section>



Sub CBA Bottom View <TV Section>



BT9200F01012-B

SUB CBA PARTS LOCATION GUIDE

Ref No.	Position	Ref No	Position
CAPACITORS		RESISTORS	
C9634	B-1	R9613	B-1
C9635	B-1	R9614	B-1
C9637	A-1	R9646	A-1
C9662	A-1	R9651	A-1
C9664	B-1	R9652	B-1
C9670	B-1	R9655	B-1
CONNECTORS		R9658	A-1
CN001	A-1	R9657	A-1
CN002	B-1	R9658	B-1
CN9101	A-1	R9659	A-1
CN9102	B-1	R9660	A-1
DIODES		R9661	A-1
D9630	A-1	R9671	B-1
D9638	B-1	R9681	A-1
D9641	A-1	R9682	A-1
ICS		R9687	B-1
IC9602	B-1	R9688	B-1
IC9603	B-1	R9695	B-1
COIL		R9747	C-1
L9615	A-1	R9748	C-1
TRANSISTORS		R9788	C-1
Q9608	A-1	R9789	C-1
Q9610	A-1	R9790	C-1
Q9612	A-1	R9791	C-1
Q9615	A-1		

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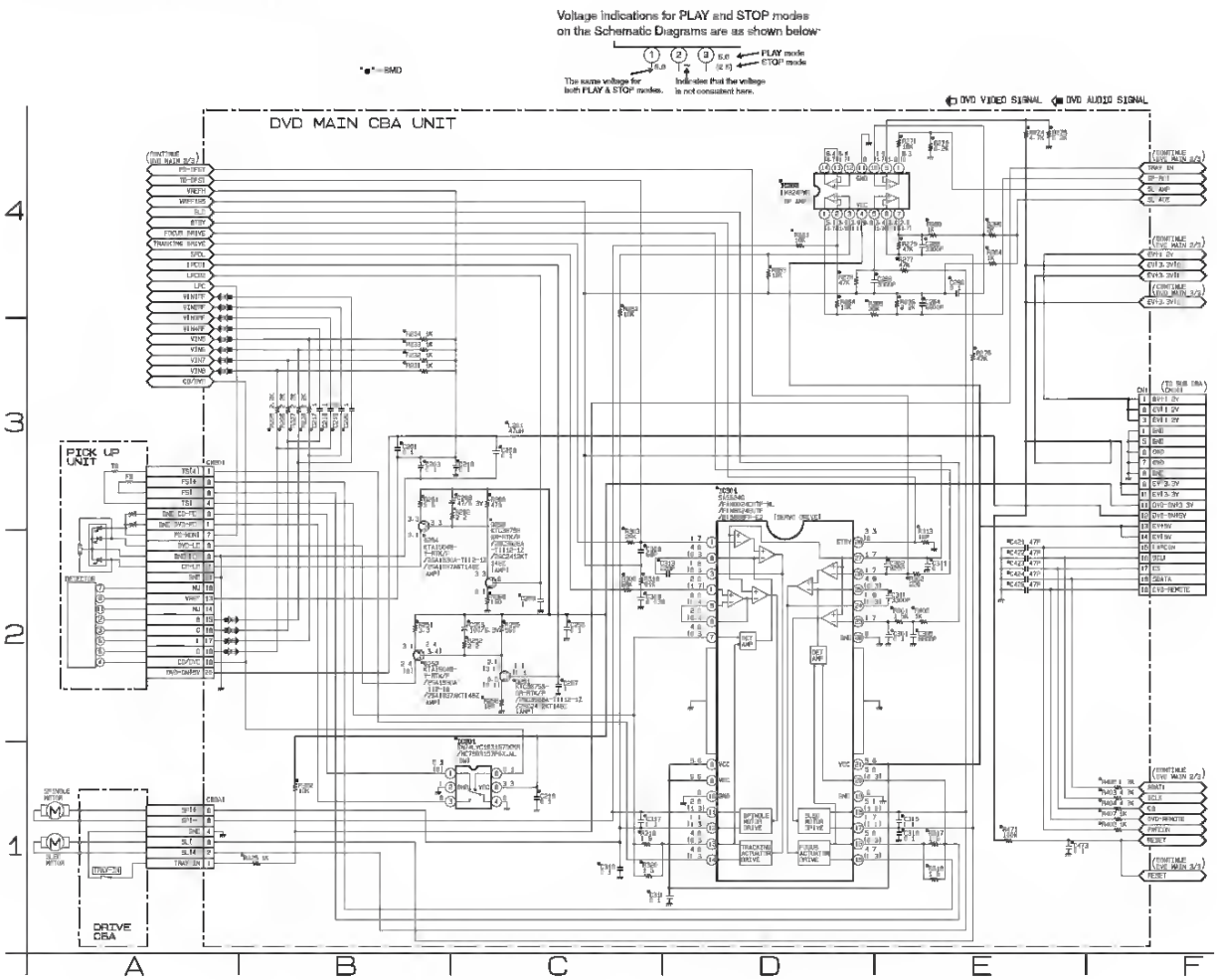
DVD Main 1/3 Schematic Diagram < DVD Section >



1-10-17

T8201SCD1

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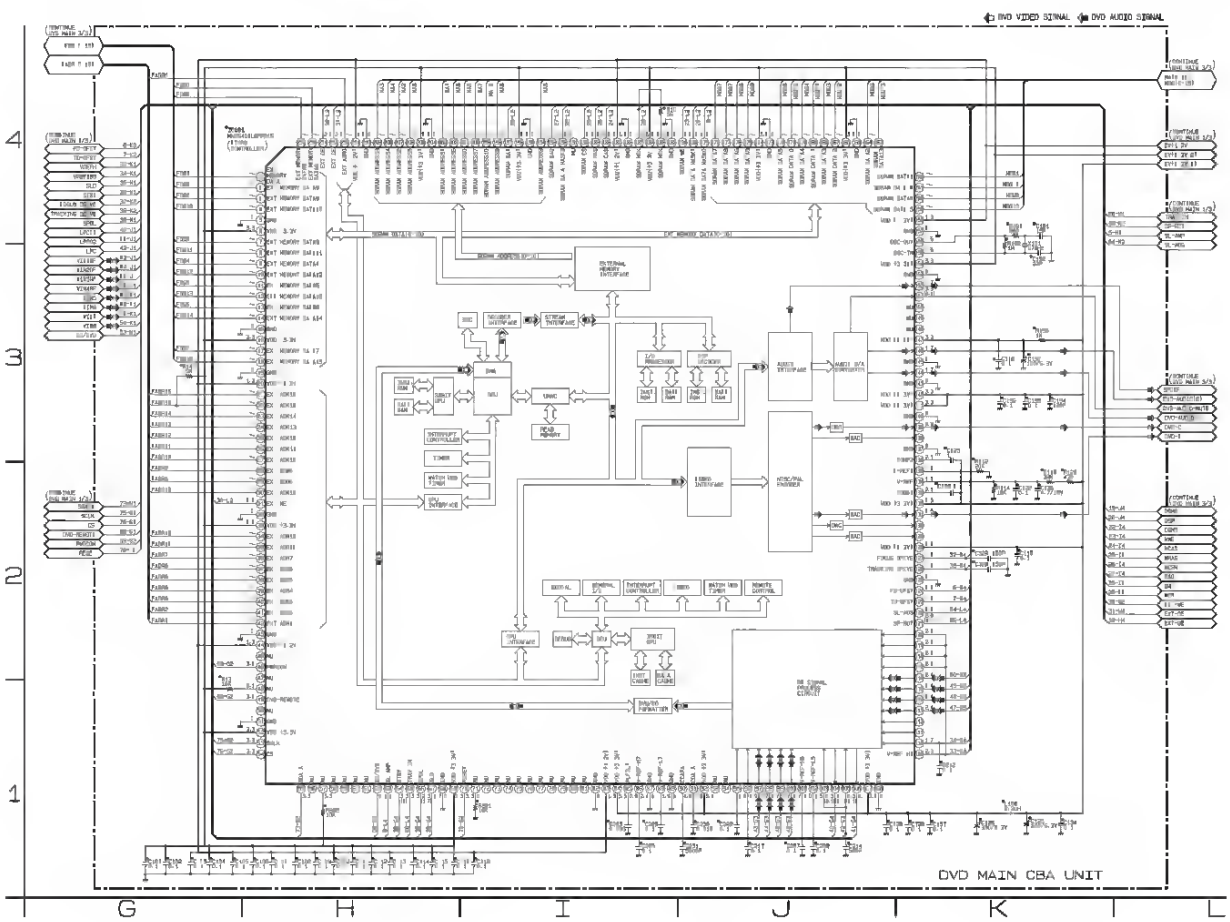
DVD Main 2/3 Schematic Diagram < DVD Section >

Voltage indications for PLAY and STOP modes on the Schematic Diagrams are as shown below:

(1) (2) (3) 5.0 (5.0) ← PLAY mode
(2) (5.0) ← STOP mode

The same voltage for both PLAY & STOP modes.

Indicates that the voltage is not consistent here.



1-10-18

T8201SCD2

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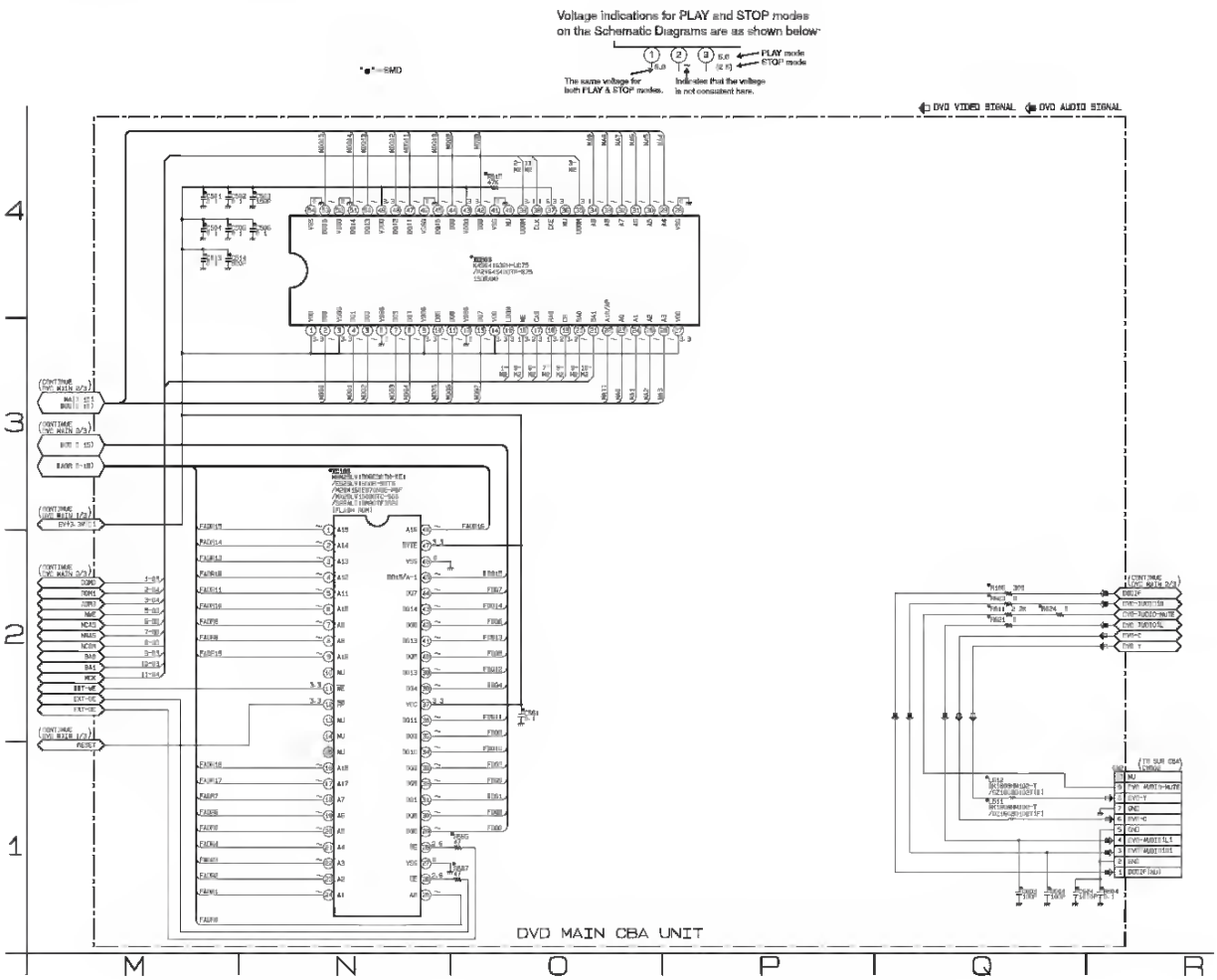
DVD Main 3/3 Schematic Diagram < DVD Section >



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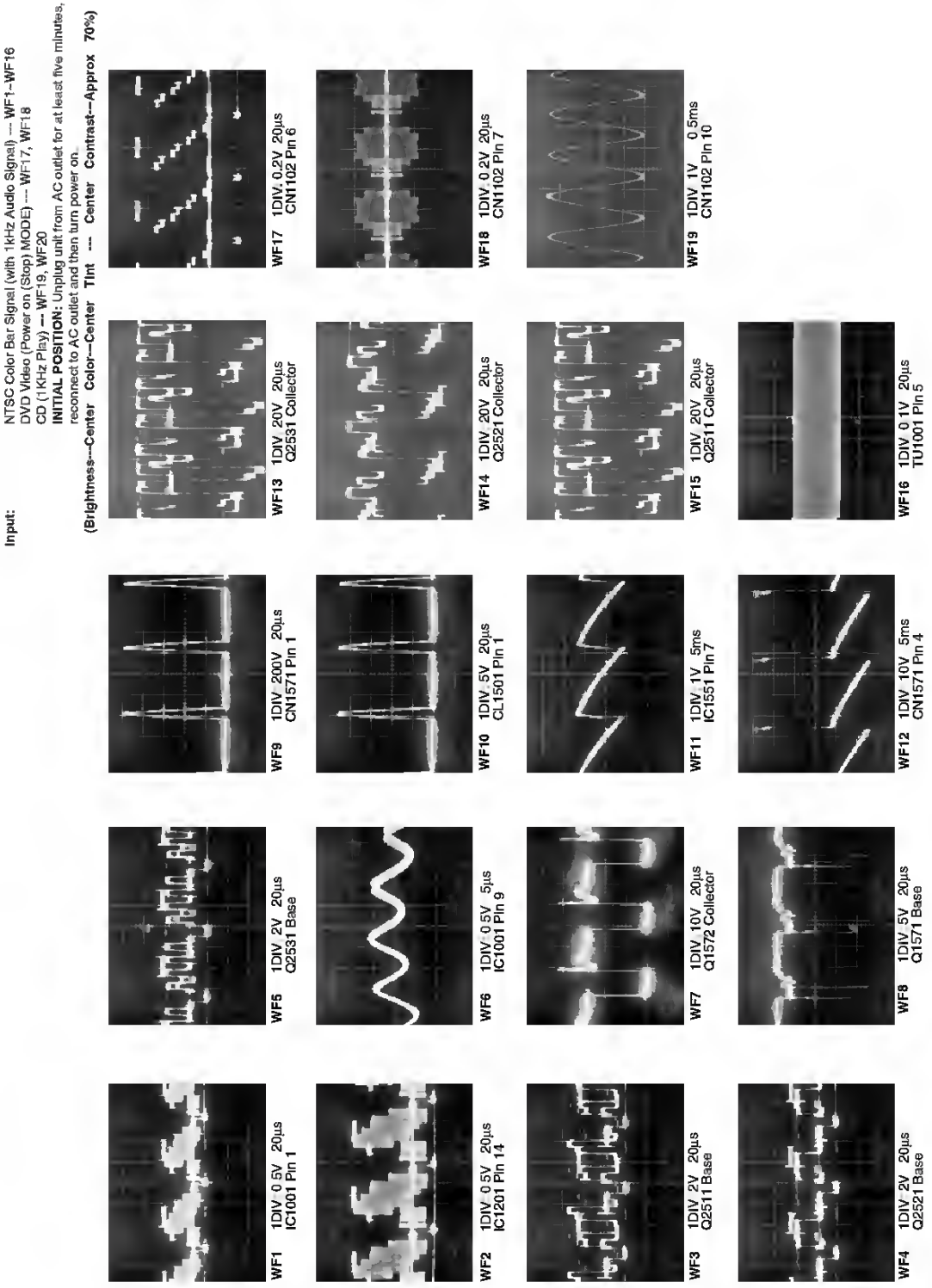
WAVEFORMS


Input: NTSC Color Bar Signal (with 1kHz Audio Signal) --- WF1-WF16
DVD Video (Power on (Stop) MODE) --- WF17, WF18
CD (1KHz Play) --- WF19, WF20
INITIAL POSITION: Unplug unit from AC outlet for at least five minutes, reconnect to AC outlet and then turn power on.
(Brightness---Center Color---Center Tint --- Center Contrast---Approx 70%)
WF1 1DIV 0.5V 20µs IC1001 Pin 1
WF2 1DIV 0.5V 20µs IC1201 Pin 14
WF3 1DIV 2V 20µs Q2511 Base
WF4 1DIV 2V 20µs Q2521 Base
WF5 1DIV 2V 20µs Q2531 Base
WF6 1DIV 0.5V 5µs IC1001 Pin 9
WF7 1DIV 10V 20µs Q1572 Collector
WF8 1DIV 5V 20µs Q1571 Base
WF9 1DIV 200V 20µs CN1571 Pin 1
WF10 1DIV 5V 20µs CL1501 Pin 1
WF11 1DIV 1V 5ms IC1551 Pin 7
WF12 1DIV 10V 5ms CN1571 Pin 4
WF13 1DIV 20V 20µs Q2531 Collector
WF14 1DIV 20V 20µs Q2521 Collector
WF15 1DIV 20V 20µs Q2511 Collector
WF16 1DIV 0.1V 20µs TU1001 Pin 5
WF17 1DIV 0.2V 20µs CN1102 Pin 6
WF18 1DIV 0.2V 20µs CN1102 Pin 7
WF19 1DIV 1V 0.5ms CN1102 Pin 10

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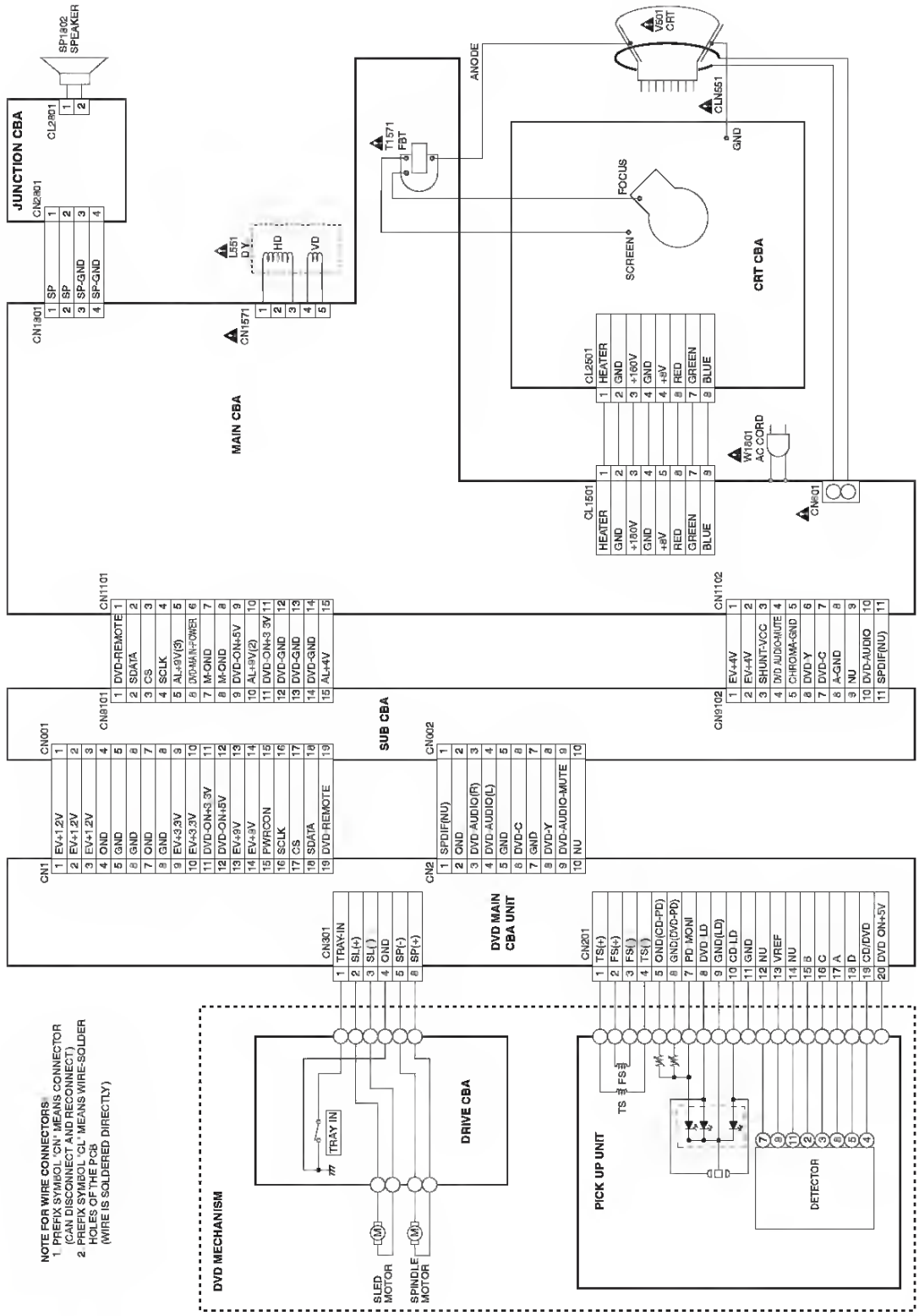
WIRING DIAGRAM



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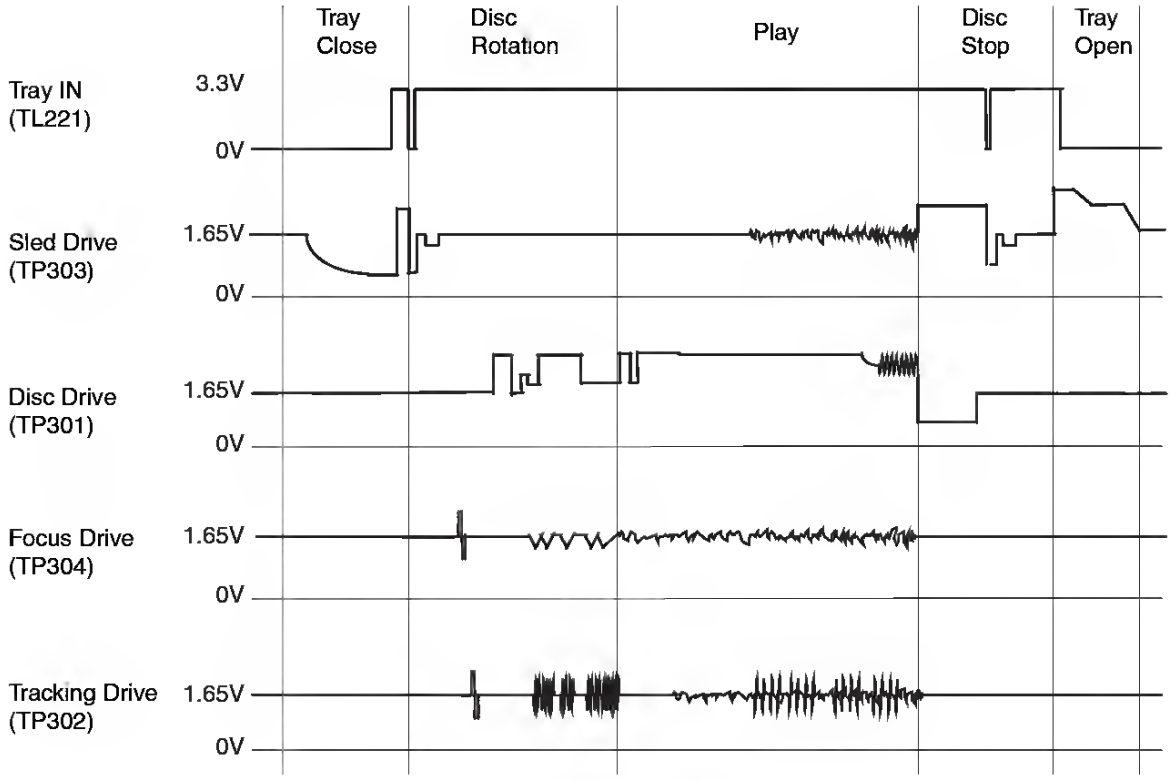
SYSTEM CONTROL TIMING CHARTS

Tray Close ~ Play / Play ~ Tray Open



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IC PIN FUNCTION DESCRIPTIONS

IC1201 (TV Micro Controller)

Pin No.	Signal Name	Function
1	GND	GND
2	NU	Not Used
3	NU	Not Used
4	TEST1	TEST 1
5	GND	GND
6	TIMER+5V	Vcc
7	TEST0	TEST 0
6	FILT	Filter
9	HLF	Horizontal Filter
10	VHOLD	Vertical Hold
11	CVIN	Composite Video Signal Input
12	RESET	Reset
13	NU	Not Used
14	CVOUT	Composite Video Signal Output
15	GND	GND
16	XTAL	Crystal Oscillation(3.56MHz)
17	C-APC	Chrominance APC
16	+5V-CTRL	+5V Regulator Control Signal Output
19	NU	Not Used
20	NU	GND
21	AUX2(L)-IN	AUX Audio L Input
22	VCC	Vcc
23	GND	GND
24	CVBS2-IN	Composite Video Signal 2 Input
25	NU	GND
26	CVBS1-IN	Composite Video Signal 1 Input
27	AUDIO MONO - IN	Tuner Audio Input
26	+5V-CTRL	+5V Regulator Control Signal Output
29	C-IN	DVD Chrominance Signal Input
30	Y-IN	DVD Luminance Signal Input
31	+9V-CTRL	+9V Regulator Control Signal Output
32	FSC OUT	Clock Output
33	NU	Not Used
34	AUDIO ATT(L) - OUT	Audio L Output
35	NU	Not Used
36	NU	GND
37	V RAMP F/B	Vertical Ramp Feed Back
36	V RAMP OUT	Vertical Ramp Output
39	V RAMP CAP	Vertical Ramp Capacitor
40	+6V-CTRL	+6V Regulator Control Signal Output
41	AUDIO ATT(R)-OUT	Audio R Output
42	H VCO F/B	Horizontal Vco Feed Back
43	AFC FILT	Horizontal AFC Filter
44	GND	GND
45	FBP IN	Flyback Pulse Input
46	H-OUT	Horizontal Pulse Output
47	VCC	Vcc
46	VCC	Vcc
49	VCC	Vcc
50	R OUT	Red Signal Output
51	G OUT	Green Signal Output
52	B OUT	Blue Signal Output
53	ACL	Automatic Contrast Limiter
54	NU	Not Used
55	DVD-MAIN-POWER	Power On Signal at High for DVD
56	SDA	Serial Data
57	I2C-OPEN	Chip Select
56	SCL	Serial Clock
59	CS	DVD Interface Chip Select
60	SDATA	DVD Interface Serial Data
61	SCLK	DVD Interface Serial Clock
62	VOLUME	Volume Control Signal Output
63	REMOTE-OUT	Remote Control Signal Output to DVD
64	NU	Not Used
65	GND	GND
66	KEY-0	Key Input 0
67	X-RAY	X-RAY Protect
66	DVD-AUDIO-MUTE	DVD Audio Mute Signal
69	AFT	AFT Voltage Input
70	REMOTE-IN	Remote Control Signal Input
71	NU	Not Used
72	NU	Not Used

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Pin No.	Signal Name	Function
73	P-SAFETY 1	Power Supply Failure Detection 1
74	P-SAFETY 2	Power Supply Failure Detection 2
75	P-SAFETY 3	Power Supply Failure Detection 3
76	P-ON-H	Power On Signal at High
77	NU	Not Used
78	AMP-STANDBY	Speaker Amp. ON/OFF Output Signal
79	SP-MUTE	Audio Mute Signal Output
80	DVD-L	DVD at Low

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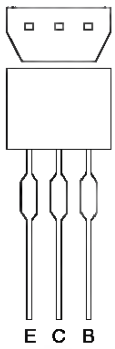
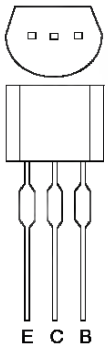
LEAD IDENTIFICATIONS

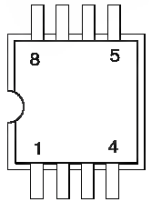


2SC2785(F,H,J)
KTC3199-GR-AT/P
KTA1267-GR-AT/P

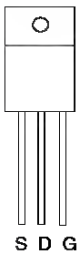


2SA1175(F)
2SA950-(O,Y)(TE2 F T)
2SA1015-GR(TE2 F T)
2SC1627-Y(TE2.F.T)
2SC2120-(O,Y)(TE2 F T)
2SC2482
2SC1815-GR(TE2 F T)
KTA1271-Y-AT/P
KTA-1266-GR-AT/P
KTC3198-GR-AT/P
KTC3207-AT/P

AT24C02N-10SU-1.8SL
BR24L02F-WE2
CAT24WC02WI-TE13
M24C02-WMN6P
M24C02-WMN6TP

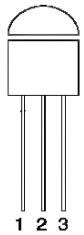


2SK3563
RDX050N50FD5



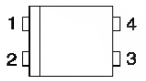
AN15524A
LA78040A

KIA431-AT/P



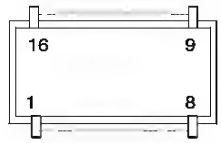
1: R
2: A
3: K

LTV-817C-F

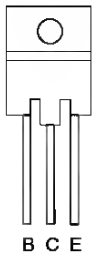


1: A
2: K
3: E
4: C

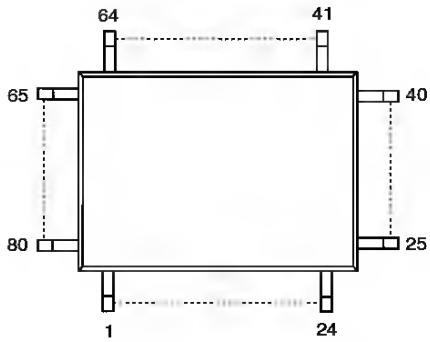
AN17812B
SA7412



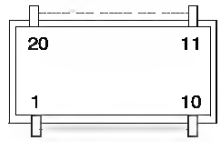
2SC5884000RF



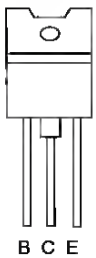
M61271M8-073FP RF3T



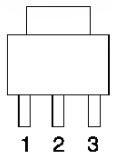
M61113FP TF0G



TT2138LS-YB11



LD1117SC-R
LM1117S-ADJ
TLV1117IDCYRG3



1: GND
2: Vout
3: Vin

Note:
A: Anode
K: Cathode
E: Emitter
C: Collector
B: Base
R: Reference
S: Source
G: Gate
D: Drain

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ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTES:
Parts that are not assigned part numbers (---------) are not available.
Tolerance of Capacitors and Resistors are noted with the following symbols.

C... ±0.25%	D... ±0.5%	F... ±1%
G... ±2%	J... ±5%	K... ±10%
M... ±20%	N... ±30%	Z... +80/-20%

ELECTRICAL PARTS LIST

13MC3206/37

Pos.No.	⚠	12 NC	Description	
			DVD MAIN CBA UNIT	1
			MMA CBA	1
			Consists of the following:	
			MAIN CBA	1
			SUB CBA	1
			CRT CBA	1
			JUNCTION CBA	1
			MAIN CBA	
BC1571			BEAD INDUCTOR FBA04HA600VB-00	1
BC1602			BEADS INDUCTOR FBR07HA121SB-00	1
BC1611			BEAD CORE B16 RH 3.5X3X1.3	1
BC1611			BEEDS HF70BB3.5X3X1.3	1
CF1031			CERAMIC TRAP 4.5MHZ	1
CF1031			CERAMIC TRAP 4.5MHZ	1
CF1032			CERAMIC FILTER SFSRA4M50CF00-B0	1
CF1032			4.5M FILTER LTH4.5MCB	1
CF1032			CERAMIC FILTER 4.5MHZ	1
F1601	⚠		FUSE STC4A125V U/CT	1
F1601	⚠		FUSE 4.00A/125V	1
FH1601			FUSE HOLDER MSF-015 LF (B110)	1
FH1602			FUSE HOLDER MSF-015 LF (B110)	1
JK1701			RCA JACK(YELLOW) MTJ-032-05B-20(B110)	1
JK1701			JACK RCA PCB L 01 AV1-05-022	1
JK1701			RCA JACK(YELLOW) (PB FREE) AV-3B-54H	1
JK1703			RCA JACK(WHITE) MTJ-032-05B-22(B110)	1
JK1703			JACK RCA PCB L 01 AV1-05-023	1
JK1801			MINIATURE JACK(PB FREE) CKX-035-318AZ4	1
JK1801			JACK SW HPEP SML PCB L PJ-350	1
PS1601	⚠		THERMISTOR ZPB45BL7R0A	1
PS1601	⚠		PTC THERMISTOR WMZ71-7R0N120	1
RS1201			SENSOR REMOTE RECEIVER KSM-602SR2S	1
RS1201			REMOCON RECEIVE UNIT PIC-37042SR	1
RS1201			REMOCON RESEVER MIM-0BM8DKL-C	1
SA1601	⚠		SURGE ABSORBER 470V+-10PER	1
SF1002			FILTER CERAMIC BAND PASS SAFHS45M7VAMZ00B05	1
SG1601	⚠		GAP. FNR-G3.10D	1
T1571	⚠		TRANS FBT JF0501-3101B-G	1
T1571	⚠		TRANS FBT BSC23-2603S-G	1
T1572			HORIZONTAL DRIVE TRANS LP2-005	1
T1601	⚠		TRANS POWER 6704	1
T1601	⚠		TRANS POWER BCK-28-9989	1
TL2			SCREW B-TIGHT D3X8 BIND HEAD+	1
TB4			HEAT SINK PLC T8200UA	1
TB5			HEAT SINK PLB T8200UA	1
TP1304			PCB JUMPER D0.6-P5.0	1
TP1305			PCB JUMPER D0.6-P5.0	1
TP1306			PCB JUMPER D0.6-P5.0	1

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ELECTRICAL PARTS LIST

Pos.No.	⚠	12 NC	Description	13MC3206/37
TP1307			PCB JUMPER D0.6-P5.0	1
TP1731			PCB JUMPER D0.6-P12.5	1
TU1001			TUNER UNIT TEFH9-001A	1
VR1601	⚠		CARBON P.O.T. VZ067TL1 B103 PB(F)	1
W1601	⚠		AC CORD PB8B2F9110A-055	1
W1601	⚠		AC CORD A0A0280-005	1
WT1			LEAD CLAMPER	1
WT1			LEAD CLAMPER GT-60M	1
X1301			XTAL 3.579545 MHZ	1
X1301			XTAL 3.579545MHZ(30PPM)	1
CAPACITORS				
C1002			ELECTROLYTIC CAP. 330UF/6.3V M	1
C1002			ELECTROLYTIC CAP. 330UF/6.3V M	1
C1002			ALUMINUM ELECTROLYTIC CAP 330UF/6.3V M	1
C1003			CHIP CERAMIC CAP.(1606) B K 0.01UF/50V	1
C1006			ELECTROLYTIC CAP. 10UF/50V M	1
C1006			ELECTROLYTIC CAP. 10UF/50V M	1
C1006			ALUMINUM ELECTROLYTIC CAP 10UF/50V M	1
C1008			ELECTROLYTIC CAP. 100UF/10V M	1
C1008			ELECTROLYTIC CAP. 100UF/10V M	1
C1008			ELECTROLYTIC CAP. 100UF/10V M	1
C1009			CHIP CERAMIC CAP. F Z 0.022UF/50V	1
C1033			CHIP CERAMIC CAP.(1606) B K 0.01UF/50V	1
C1036			CHIP CERAMIC CAP.(1606) B K 1000PF/50V	1
C1037			CHIP CERAMIC CAP. F Z 1UF/10V	1
C1039A			ELECTROLYTIC CAP. 1UF/50V M	1
C1039A			ELECTROLYTIC CAP 1UF/50V M	1
C1039A			ELECTROLYTIC CAP 1UF/50V M	1
C1042			CHIP CERAMIC CAP. F Z 1UF/10V	1
C1044			CHIP CERAMIC CAP.(1606) B K 0.01UF/50V	1
C1047			CHIP CERAMIC CAP.(1606) B K 0.01UF/50V	1
C1048			ELECTROLYTIC CAP. 10UF/50V M	1
C1048			ELECTROLYTIC CAP. 10UF/50V M	1
C1048			ALUMINUM ELECTROLYTIC CAP 10UF/50V M	1
C1052			CHIP CERAMIC CAP.(1606) B K 0.047UF/50V	1
C1053			CHIP CERAMIC CAP. B K 0.018UF/50V	1
C1053			CAP CHIP 1606 B K 0.018UF/25V	1
C1204			CHIP CERAMIC CAP.(1606) B K 0.015UF/50V	1
C1205			CHIP CERAMIC CAP.(1606) B K 1000PF/50V	1
C1206			CHIP CERAMIC CAP. B K 220PF/50V	1
C1206			CHIP CERAMIC CAP. SL J 220PF/50V	1
C1207			FILM CAP.(P) 0.001UF/50V J	1
C1207			FILM CAP.(P) 0.001UF/50V J	1
C1207			POLYESTER FILM CAP. (PB FREE) 0.001UF/100V J	1
C1208			CHIP CERAMIC CAP.(1606) B K 0.047UF/50V	1
C1209			CHIP CERAMIC CAP.(1606) F Z 0.1UF/25V	1
C1219			CHIP CERAMIC CAP. CH J 150PF/50V	1
C1220			CHIP CERAMIC CAP. CH J 150PF/50V	1
C1222			ELECTROLYTIC CAP. 1UF/50V M	1
C1222			ELECTROLYTIC CAP 1UF/50V M	1
C1222			ELECTROLYTIC CAP 1UF/50V M	1
C1223			ELECTROLYTIC CAP. 10UF/50V M	1
C1223			ELECTROLYTIC CAP. 10UF/50V M	1
C1223			ALUMINUM ELECTROLYTIC CAP 10UF/50V M	1
C1224			ELECTROLYTIC CAP. 1UF/50V M	1
C1224			ELECTROLYTIC CAP 1UF/50V M	1
C1224			ELECTROLYTIC CAP 1UF/50V M	1
C1225			ELECTROLYTIC CAP. 47UF/25V M	1
C1225			ELECTROLYTIC CAP. 47UF/25V M	1
C1225			ALUMINUM ELECTROLYTIC CAP 47UF/25V M	1
C1231			ELECTROLYTIC CAP. 100UF/10V M	1
C1231			ELECTROLYTIC CAP. 100UF/10V M	1
C1231			ELECTROLYTIC CAP 100UF/10V M	1
C1232			ELECTROLYTIC CAP 4.7UF/50V M	1
C1232			ELECTROLYTIC CAP 4.7UF/50V M	1
C1232			ALUMINUM ELECTROLYTIC CAP 4.7UF/50V M	1
C1233			CHIP CERAMIC CAP. F Z 0.01UF/50V	1
C1234			CHIP CERAMIC CAP. B K 560PF/50V	1

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Pos.No.	⚠	12 NC	Description	13MC3206/37
C1302			CHIP CERAMIC CAP.(1608) B K 0.01UF/50V	1
C1304			ELECTROLYTIC CAP. 100UF/10V M	1
C1304			ELECTROLYTIC CAP. 100UF/10V M	1
C1304			ELECTROLYTIC CAP. 100UF/10V M	1
C1306			CHIP CERAMIC CAP. F Z 1UF/10V	1
C1307			CHIP CERAMIC CAP. F Z 1UF/10V	1
C1308			ELECTROLYTIC CAP. 47UF/25V M	1
C1308			ELECTROLYTIC CAP. 47UF/25V M	1
C1308			ALUMINUM ELECTROLYTIC CAP 47UF/25V M	1
C1309			CHIP CERAMIC CAP.(1608) F Z 0.1UF/25V	1
C1310			CHIP CERAMIC CAP. F Z 1UF/10V	1
C1311			ELECTROLYTIC CAP. 100UF/16V M	1
C1311			ELECTROLYTIC CAP. 100UF/16V M	1
C1311			ELECTROLYTIC CAP. 100UF/16V M	1
C1313			ELECTROLYTIC CAP. 100UF/16V M	1
C1313			ELECTROLYTIC CAP. 100UF/16V M	1
C1313			ELECTROLYTIC CAP. 100UF/16V M	1
C1314			CHIP CERAMIC CAP. B K 470PF/50V	1
C1316			CHIP CERAMIC CAP. F Z 1UF/10V	1
C1317			STACKED FILM CAP. 0.47UF/50V J	1
C1317			TF CAP. 0.47UF/50V J	1
C1317			TF CAP. 0.47UF/50V J	1
C1317			METALIZED POLYESTER FILM CAP. 0.47UF/50V J	1
C1317			METALIZED POLYESTER FILM CAP. 0.47UF/63V J	1
C1318			CHIP CERAMIC CAP.(1608) B K 0.01UF/50V	1
C1319			ELECTROLYTIC CAP. 2.2UF/50V M	1
C1319			ELECTROLYTIC CAP. 2.2UF/50V M	1
C1319			ALUMINUM ELECTROLYTIC CAP 2.2UF/50V M	1
C1320			CHIP CERAMIC CAP.(1608) B K 0.01UF/50V	1
C1324			ELECTROLYTIC CAP. 470UF/10V M	1
C1324			ELECTROLYTIC CAP. 470UF/10V M	1
C1324			ELECTROLYTIC CAP. 470UF/10V M	1
C1325			CHIP CERAMIC CAP. F Z 1UF/10V	1
C1335			ELECTROLYTIC CAP. 100UF/16V M	1
C1335			ELECTROLYTIC CAP. 100UF/16V M	1
C1335			ELECTROLYTIC CAP. 100UF/16V M	1
C1348			ELECTROLYTIC CAP. 100UF/10V M	1
C1348			ELECTROLYTIC CAP. 100UF/10V M	1
C1348			ELECTROLYTIC CAP. 100UF/10V M	1
C1352			CERAMIC CAP.(AX) Y M 0.01UF/16V	1
C1552			FILM CAP.(P) 0.22UF/100V J	1
C1552			FILM CAP.(P) 0.22UF/100V J	1
C1552			POLYESTER FILM CAP. (PB FREE) 0.22UF/100V J	1
C1552			METALIZED POLYESTER FILM CAP. 0.22UF/63V J	1
C1553			ELECTROLYTIC CAP. 2.2UF/50V LL	1
C1555			ELECTROLYTIC CAP. 47UF/35V M	1
C1555			ELECTROLYTIC CAP. 47UF/35V M	1
C1555			ELECTROLYTIC CAP. 47UF/35V M	1
C1556			ELECTROLYTIC CAP. 1000UF/25V M	1
C1556			ELECTROLYTIC CAP. 1000UF/25V M	1
C1556			ALUMINUM ELECTROLYTIC CAP 1000UF/25V M	1
C1558			CHIP CERAMIC CAP. F Z 0.01UF/50V	1
C1559			ELECTROLYTIC CAP. 330UF/35V M	1
C1559			ALUMINUM ELECTROLYTIC CAP. 330UF/35V (MA-HC)	1
C1560			FILM CAP.(P) 0.01UF/50V J	1
C1560			FILM CAP.(P) 0.01UF/50V J	1
C1560			POLYESTER FILM CAP. (PB FREE) 0.01UF/100V J	1
C1571			P.P. CAP 0.33UF/200V J	1
C1571			PP CAP. 0.33UF/250V J	1
C1571			METALIZED FILM CAP. 0.33UF/200V J	1
C1574			ELECTROLYTIC CAP. 4.7UF/250V M	1
C1574			ALUMINUM ELECTROLYTIC CAP 4.7UF/250V M	1
C1577			FILM CAP.(P) 0.022UF/50V J	1
C1577			FILM CAP.(P) 0.022UF/50V J	1
C1577			POLYESTER FILM CAP. (PB FREE) 0.022UF/100V J	1
C1578			ELECTROLYTIC CAP. 47UF/35V M	1
C1578			ELECTROLYTIC CAP. 47UF/35V M	1
C1578			ELECTROLYTIC CAP. 47UF/35V M	1

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Pos.No.	⚠	12 NC	Description	
C1580	⚠		PP CAP 0.0082UF/1.6K J	1
C1580	⚠		PP CAP. 0.0082UF/1.6KV J	1
C1580	⚠		METALIZED FILM CAP. 0.0082UF/1.6KV J	1
C1580	⚠		POLYPROPYLENE FILM CAP. 0.0082UF/1.6KV	1
C1584			ELECTROLYTIC CAP. 1UF/160V M	1
C1584			ALUMINUM ELECTROLYTIC CAP 1UF/160V M	1
C1591			ELECTROLYTIC CAP. 10UF/50V M	1
C1591			ELECTROLYTIC CAP. 10UF/50V M	1
C1591			ALUMINUM ELECTROLYTIC CAP 10UF/50V M	1
C1592			ELECTROLYTIC CAP. 47UF/16V M H7	1
C1592			ALUMINUM ELECTROLYTIC CAP 47UF/16V H7	1
C1593			ELECTROLYTIC CAP. 2.2UF/50V M H7	1
C1593			ALUMINUM ELECTROLYTIC CAP 2.2UF/50V H7	1
C1594			ELECTROLYTIC CAP. 47UF/160V M W/F	1
C1594			ALUMINUM ELECTROLYTIC CAP 47UF/160V M	1
C1594			ELECTROLYTIC CAP. 47UF/160V M W/F	1
C1601	⚠		METALIZED FILM CAP. 0.22UF/250V	1
C1601	⚠		ACROSS THE LINE CAP. 0.22UF/250V	1
C1602	⚠		METALIZED FILM CAP. 0.1UF/250V	1
C1602	⚠		LINE ACROSS CAP. 0.1U/250V	1
C1605	⚠		CERAMIC CAP. BN 560PF/2KV	1
C1605	⚠		CERAMIC CAP. 560PF/2KV	1
C1605	⚠		CERAMIC CAP. RB 560PF/2KV	1
C1605	⚠		CERAMIC CAP. BL 560PF/2KV	1
C1607	⚠		SAFETY CAP. 4700PF/250V KX	1
C1607	⚠		SAFETY CAP. 4700PF/250V M	1
C1607	⚠		CAP CERAMIC Y1 4700PF/AC400V/E/M	1
C1609	⚠		FILM CAP.(P) 0.068UF/50V J	1
C1609	⚠		FILM CAP.(P) 0.068UF/50V J	1
C1609	⚠		POLYESTER FILM CAP. (PB FREE) 0.068UF/100V J	1
C1610	⚠		ELECTROLYTIC CAPACITOR 270UF/200V	1
C1611			FILM CAP.(P) 0.0012UF/50V J	1
C1611			FILM CAP.(P) 0.0012UF/50V J	1
C1611			POLYESTER FILM CAP. (PB FREE) 0.0012UF/100V J	1
C1612			FILM CAP.(P) 0.047UF/50V J	1
C1612			FILM CAP.(P) 0.047UF/50V J	1
C1612			POLYESTER FILM CAP. (PB FREE) 0.047UF/100V J	1
C1613			ELECTROLYTIC CAP. 22UF/50V M	1
C1613			ELECTROLYTIC CAP. 22UF/50V M	1
C1613			ELECTROLYTIC CAP 22UF/50V M	1
C1615	⚠		CERAMIC CAP. BN 680PF/2KV	1
C1615	⚠		CERAMIC CAP. 680PF/2KV	1
C1615	⚠		CERAMIC CAP. RB 680PF/2KV	1
C1615	⚠		CERAMIC CAP. BL 680PF/2KV	1
C1616			ELECTROLYTIC CAP. 100UF/160V M	1
C1616			ALUMINUM ELECTROLYTIC CAP 100UF/160V M	1
C1616			ALUMINUM ELECTROLYTIC CAP 100UF/160V M	1
C1617			ELECTROLYTIC CAP. 470UF/35V M	1
C1617			ELECTROLYTIC CAP. 470UF/35V M	1
C1617			ALUMINUM ELECTROLYTIC CAP 470UF/35V M	1
C1619			ELECTROLYTIC CAP. 470UF/16V M	1
C1619			ELECTROLYTIC CAP. 470UF/16V M	1
C1619			ELECTROLYTIC CAP. 470UF/16V M	1
C1621			CERAMIC CAP. B K 1000PF/100V	1
C1623			FILM CAP.(P) 0.01UF/50V J	1
C1623			FILM CAP.(P) 0.01UF/50V J	1
C1623			POLYESTER FILM CAP. (PB FREE) 0.01UF/100V J	1
C1625			ELECTROLYTIC CAP. 1000UF/10V M	1
C1625			ELECTROLYTIC CAP. 1000UF/10V M	1
C1625			ALUMINUM ELECTROLYTIC CAP 1000UF/10V M	1
C1626			ELECTROLYTIC CAP. 22UF/50V M	1
C1626			ELECTROLYTIC CAP. 22UF/50V M	1
C1626			ELECTROLYTIC CAP 22UF/50V M	1
C1627			CERAMIC CAP. B K 1000PF/100V	1
C1630			CERAMIC CAP.(AX) X K 5600PF/16V	1
C1639			ELECTROLYTIC CAP. 47UF/25V M	1
C1639			ELECTROLYTIC CAP. 47UF/25V M	1
C1639			ALUMINUM ELECTROLYTIC CAP 47UF/25V M	1

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Pos.No.	⚠	12 NC	Description	
C1640			ELECTROLYTIC CAP. 1000UF/16V M	1
C1640			ELECTROLYTIC CAP. 1000UF/16V M	1
C1640			ALUMINUM ELECTROLYTIC CAP 1000UF/16V M	1
C1650			STACKED FILM CAP. 0.47UF/50V J	1
C1650			TF CAP. 0.47UF/50V J	1
C1650			TF CAP. 0.47UF/50V J	1
C1650			METALIZED POLYESTER FILM CAP. 0.47UF/50V J	1
C1650			METALIZED POLYESTER FILM CAP. 0.47UF/63V J	1
C1704			CHIP CERAMIC CAP. F Z 1UF/10V	1
C1803			ELECTROLYTIC CAP. 220UF/16V M	1
C1803			ELECTROLYTIC CAP. 220UF/16V M	1
C1803			ELECTROLYTIC CAP. 220UF/16V M	1
C1805			ELECTROLYTIC CAP. 470UF/16V M	1
C1805			ELECTROLYTIC CAP. 470UF/16V M	1
C1805			ELECTROLYTIC CAP. 470UF/16V M	1
C1808			CHIP CERAMIC CAP. F Z 1UF/10V	1
C1809			CHIP CERAMIC CAP.(1608) B K 0.01UF/50V	1
C1812			ELECTROLYTIC CAP. 100UF/16V M	1
C1812			ELECTROLYTIC CAP. 100UF/16V M	1
C1812			ELECTROLYTIC CAP. 100UF/16V M	1
C1813			ELECTROLYTIC CAP. 4.7UF/50V M	1
C1813			ELECTROLYTIC CAP. 4.7UF/50V M	1
C1813			ALUMINUM ELECTROLYTIC CAP 4.7UF/50V M	1
C1815			CHIP CERAMIC CAP. F Z 1UF/10V	1
C1817			CHIP CERAMIC CAP.(1608) B K 6800PF/50V	1
CONNECTORS				
CN601A			TERMINAL PRINTBORD PIN MS-PIN155155	1
CN601B			TERMINAL PRINTBORD PIN MS-PIN155155	1
CN1571	⚠		CONNECTOR 5P(PB FREE) 200322305W8	1
CN1571	⚠		CONNECTOR PRINT OSU 5P RTB-1.5-5P (LF)	1
CN1571	⚠		CONNECTOR PRINT OSU 5P JS-1103-05(NM)	1
CN1801			242 SERIES CONNECTOR 224202104W1	1
DIODES				
D1001			SWITCHING DIODE 1SS133(T-77)	1
D1001			SWITCHING DIODE 1N4148	1
D1002			SWITCHING DIODE 1SS133(T-77)	1
D1002			SWITCHING DIODE 1N4148	1
D1302			ZENER DIODE MTZJT-7710A	1
D1302			ZENER DIODE DZ-10BSAT265	1
D1303			PCB JUMPER D0.6-P5.0	1
D1309			SWITCHING DIODE 1SS133(T-77)	1
D1309			SWITCHING DIODE 1N4148	1
D1319			ZENER DIODE MTZJT-775.1B	1
D1319			ZENER DIODE DZ-5.1BSBT265	1
D1552			DIODE 1N5397-B	1
D1552			RECTIFIER DIODE ERA15-02	1
D1552			DIODE 1N5397BD	1
D1571			RECTIFIER DIODE FR202-B/P	1
D1571			FAST RECOVERY DIODE FR202	1
D1572	⚠		DIODE FR104-B	1
D1572	⚠		DIODE FR104BB	1
D1584			SWITCHING DIODE 1SS133(T-77)	1
D1584			SWITCHING DIODE 1N4148	1
D1590	⚠		SWITCHING DIODE 1SS133(T-77)	1
D1590	⚠		SWITCHING DIODE 1N4148	1
D1591	⚠		ZENER DIODE MTZJT-7736B	1
D1591	⚠		ZENER DIODE DZ-36BSBT265	1
D1595	⚠		ZENER DIODE MTZJT-7720C	1
D1595	⚠		ZENER DIODE DZ-20BSCT265	1
D1596	⚠		SWITCHING DIODE 1SS133(T-77)	1
D1596	⚠		SWITCHING DIODE 1N4148	1
D1597	⚠		SWITCHING DIODE 1SS133(T-77)	1
D1597	⚠		SWITCHING DIODE 1N4148	1
D1598	⚠		DIODE FR104-B	1
D1598	⚠		DIODE FR104BB	1
D1603	⚠		DIODE 1N5399-B/P	1
D1603	⚠		RECTIFIER DIODE ERB12-06	1
D1603	⚠		DIODE 1N5399BE	1

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Pos.No.	⚠	12 NC	Description	13MC3206/37
D1604	⚠		DIODE 1N5399-B/P	1
D1604	⚠		RECTIFIER DIODE ERB12-06	1
D1604	⚠		DIODE 1N5399BE	1
D1605	⚠		DIODE 1N5399-B/P	1
D1605	⚠		RECTIFIER DIODE ERB12-06	1
D1605	⚠		DIODE 1N5399BE	1
D1606	⚠		DIODE 1N5399-B/P	1
D1606	⚠		RECTIFIER DIODE ERB12-06	1
D1606	⚠		DIODE 1N5399BE	1
D1607	⚠		ZENER DIODE MTZJT-7720C	1
D1607	⚠		ZENER DIODE DZ-20BSCT265	1
D1609			SWITCHING DIODE 1SS133(T-77)	1
D1610			ZENER DIODE MTZJT-775.6B	1
D1610			ZENER DIODE DZ-5.6BSBT265	1
D1613	⚠		SWITCHING DIODE 1SS133(T-77)	1
D1614	⚠		ZENER DIODE MTZJT-7736A	1
D1614	⚠		ZENER DIODE DZ-36BSAT265	1
D1617	⚠		SCHOTTKY BARRIER DIODE SB140	1
D1617	⚠		SCHOTTKY BARRIER DIODE ERA81-004Q	1
D1618	⚠		DIODE 15KRA40	1
D1618	⚠		RECOVERY DIODE ERC18-04	1
D1619			DIODE FR104-B	1
D1619			DIODE FR104BB	1
D1620	⚠		ZENER DIODE MTZJT-777.5B	1
D1620	⚠		ZENER DIODE DZ-7.5BSBT265	1
D1621			SWITCHING DIODE 1SS133(T-77)	1
D1621			SWITCHING DIODE 1N4148	1
D1623	⚠		DIODE FR154	1
D1623	⚠		FAST RECOVERY DIODE ERB44-02	1
D1623	⚠		DIODE FR154BD	1
D1624			ZENER DIODE MTZJT-7715B	1
D1624			ZENER DIODE DZ-15BSBT265	1
D1625			RECTIFIER DIODE FR202-B/P	1
D1625			FAST RECOVERY DIODE FR202	1
D1626			ZENER DIODE MTZJT-7736A	1
D1626			ZENER DIODE DZ-36BSAT265	1
D1627	⚠		SCHOTTKY BARRIER DIODE SB140	1
D1627	⚠		SCHOTTKY BARRIER DIODE ERA81-004Q	1
D1629	⚠		SWITCHING DIODE 1SS133(T-77)	1
D1629	⚠		SWITCHING DIODE 1N4148	1
D1632			SWITCHING DIODE 1SS133(T-77)	1
D1632			SWITCHING DIODE 1N4148	1
D1633			ZENER DIODE MTZJT-7711B	1
D1633			ZENER DIODE DZ-11BSBT265	1
D1634			SWITCHING DIODE 1SS133(T-77)	1
D1634			SWITCHING DIODE 1N4148	1
D1639			PCB JUMPER D0.6-P10.0	1
D1640	⚠		DIODE 1ZC36(Q)	1
D1650			SWITCHING DIODE 1SS133(T-77)	1
D1650			SWITCHING DIODE 1N4148	1
D1652			SWITCHING DIODE 1SS133(T-77)	1
D1652			SWITCHING DIODE 1N4148	1
D1653			SWITCHING DIODE 1SS133(T-77)	1
D1653			SWITCHING DIODE 1N4148	1
D1801	⚠		SWITCHING DIODE 1SS133(T-77)	1
D1801	⚠		SWITCHING DIODE 1N4148	1
ICS				
IC1001			IC VIF/SIF M61113FP TF0G	1
IC1201	⚠		IC MICRO COMPUTER M61271M8-073FP RF3T	1
IC1202			IC(EEP-ROM) M24C02-WMN6P	1
IC1202			IC BR24L02F-WE2	1
IC1202			IC EEPROM (2K) AT24C02N-10SU-1 8SL	1
IC1202			IC(EEPROM 2KBIT) M24C02-WMN6TP	1
IC1202			IC CAT24WC02WI-TE13	1
IC1551			VERTICAL OUTPUT IC LA78040A	1
IC1551			VERTICAL OUTPUT IC AN15524A	1
IC1601	⚠		PHOTOCOUPLER LTV-817C-F	1
IC1604			IC SHUNT REGULATOR KIA431-AT/P	1

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Pos.No.	⚠	12 NC	Description	
IC1801			IC AUDIO SA7412	1
IC1801			IC AN17812B	1
COILS				
L1031			PCB JUMPER D0.6-P5.0	1
L1033			INDUCTOR 18UH-J-26T	1
L1041			PCB JUMPER D0.6-P5.0	1
L1043			PCB JUMPER D0.6-P5.0	1
L1301			PCB JUMPER D0.6-P5.0	1
L1302			PCB JUMPER D0.6-P5.0	1
L1559			PCB JUMPER D0.6-P7.5	1
L1601	⚠		LINE FILTER ELF15N813AN	1
TRANSISTORS				
Q1285			TRANSISTOR 2SC2785(F)	1
Q1285			TRANSISTOR 2SC2785(H)	1
Q1285			TRANSISTOR 2SC2785(J)	1
Q1285			TRANSISTOR KTC3199-GR-AT/P	1
Q1285			TRANSISTOR KTC3198-GR-AT/P	1
Q1285			TRANSISTOR 2SC1815-GR(TE2 F T)	1
Q1290			TRANSISTOR 2SC2785(F)	1
Q1290			TRANSISTOR 2SC2785(H)	1
Q1290			TRANSISTOR 2SC2785(J)	1
Q1290			TRANSISTOR KTC3199-GR-AT/P	1
Q1290			TRANSISTOR KTC3198-GR-AT/P	1
Q1290			TRANSISTOR 2SC1815-GR(TE2 F T)	1
Q1291			TRANSISTOR 2SC2785(F)	1
Q1291			TRANSISTOR 2SC2785(H)	1
Q1291			TRANSISTOR 2SC2785(J)	1
Q1291			TRANSISTOR KTC3199-GR-AT/P	1
Q1291			TRANSISTOR KTC3198-GR-AT/P	1
Q1291			TRANSISTOR 2SC1815-GR(TE2 F T)	1
Q1292			TRANSISTOR 2SC2785(F)	1
Q1292			TRANSISTOR 2SC2785(H)	1
Q1292			TRANSISTOR 2SC2785(J)	1
Q1292			TRANSISTOR KTC3199-GR-AT/P	1
Q1292			TRANSISTOR KTC3198-GR-AT/P	1
Q1292			TRANSISTOR 2SC1815-GR(TE2 F T)	1
Q1301			TRANSISTOR 2SC2785(F)	1
Q1301			TRANSISTOR 2SC2785(H)	1
Q1301			TRANSISTOR 2SC2785(J)	1
Q1301			TRANSISTOR KTC3199-GR-AT/P	1
Q1301			TRANSISTOR KTC3198-GR-AT/P	1
Q1301			TRANSISTOR 2SC1815-GR(TE2 F T)	1
Q1303			TRANSISTOR 2SC2120-O(TE2 F T)	1
Q1303			TRANSISTOR 2SC2120-Y(TE2 F T)	1
Q1304			TRANSISTOR 2SC2785(F)	1
Q1304			TRANSISTOR 2SC2785(H)	1
Q1304			TRANSISTOR 2SC2785(J)	1
Q1304			TRANSISTOR KTC3199-GR-AT/P	1
Q1304			TRANSISTOR KTC3198-GR-AT/P	1
Q1304			TRANSISTOR 2SC1815-GR(TE2 F T)	1
Q1571	⚠		TRANSISTOR TT2138LS-YB11	1
Q1571	⚠		TRANSISTOR 2SC5884000RF	1
Q1572			NPN TRANSISTOR 2SC1627-Y (TE2.F.T)	1
Q1601	⚠		MOS FET 2SK3563	1
Q1601	⚠		MOS FET RDX050N50 FD5	1
Q1602	⚠		TRANSISTOR 2SC2120-O(TE2 F T)	1
Q1602	⚠		TRANSISTOR 2SC2120-Y(TE2 F T)	1
Q1604	⚠		TRANSISTOR 2SC2785(F)	1
Q1604	⚠		TRANSISTOR 2SC2785(H)	1
Q1604	⚠		TRANSISTOR 2SC2785(J)	1
Q1604	⚠		TRANSISTOR KTC3199-GR-AT/P	1
Q1604	⚠		TRANSISTOR KTC3198-GR-AT/P	1
Q1604	⚠		TRANSISTOR 2SC1815-GR(TE2 F T)	1
Q1605			TRANSISTOR 2SC2785(F)	1
Q1605			TRANSISTOR 2SC2785(H)	1
Q1605			TRANSISTOR 2SC2785(J)	1
Q1605			TRANSISTOR KTC3199-GR-AT/P	1
Q1605			TRANSISTOR KTC3198-GR-AT/P	1

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Pos.No.	⚠	12 NC	Description	13MC3206/37
Q1605			TRANSISTOR 2SC1815-GR(TE2 F T)	1
Q1606			TRANSISTOR 2SA950-O (TE2 F T)	1
Q1606			TRANSISTOR 2SA950-Y(TE2 F T)	1
Q1606			TRANSISTOR (PB FREE) KTA1271-Y-AT/P	1
Q1607			TRANSISTOR 2SC2785(F)	1
Q1607			TRANSISTOR 2SC2785(H)	1
Q1607			TRANSISTOR 2SC2785(J)	1
Q1607			TRANSISTOR KTC3199-GR-AT/P	1
Q1607			TRANSISTOR KTC3198-GR-AT/P	1
Q1607			TRANSISTOR 2SC1815-GR(TE2 F T)	1
Q1608			TRANSISTOR 2SA950-O (TE2 F T)	1
Q1608			TRANSISTOR 2SA950-Y(TE2 F T)	1
Q1608			TRANSISTOR (PB FREE) KTA1271-Y-AT/P	1
Q1609			TRANSISTOR 2SC2785(F)	1
Q1609			TRANSISTOR 2SC2785(H)	1
Q1609			TRANSISTOR 2SC2785(J)	1
Q1609			TRANSISTOR KTC3199-GR-AT/P	1
Q1609			TRANSISTOR KTC3198-GR-AT/P	1
Q1609			TRANSISTOR 2SC1815-GR(TE2 F T)	1
Q1613			TRANSISTOR 2SC2120-O(TE2 F T)	1
Q1613			TRANSISTOR 2SC2120-Y(TE2 F T)	1
Q1614			TRANSISTOR KTC3199-GR-AT/P	1
Q1614			TRANSISTOR KTC3198-GR-AT/P	1
Q1614			TRANSISTOR 2SC1815-GR(TE2 F T)	1
Q1616			TRANSISTOR 2SC2120-O(TE2 F T)	1
Q1616			TRANSISTOR 2SC2120-Y(TE2 F T)	1
Q1619			TRANSISTOR KTC3199-GR-AT/P	1
Q1619			TRANSISTOR KTC3198-GR-AT/P	1
Q1619			TRANSISTOR 2SC1815-GR(TE2 F T)	1
RESISTORS				
R1001			CHIP RES. 1/10W J 100 OHM	1
R1002			CHIP RES. 1/10W J 100 OHM	1
R1010			CHIP RES. 1/10W J 200 OHM	1
R1011			CARBON RES. 1/4W J 47 OHM	1
R1012			CHIP RES. 1/10W J 150 OHM	1
R1016			CARBON RES. 1/4W J 330 OHM	1
R1018			CHIP RES. 1/10W J 220K OHM	1
R1019			CHIP RES. 1/10W J 220K OHM	1
R1022			CHIP RES. 1/10W J 2.2K OHM	1
R1030			CHIP RES. 1/10W J 12K OHM	1
R1031			CHIP RES. 1/10W J 27K OHM	1
R1037			CHIP RES. 1/10W J 180 OHM	1
R1041			CHIP RES. 1/10W J 56K OHM	1
R1201			CARBON RES. 1/4W J 10K OHM	1
R1202			CHIP RES. 1/10W J 2.2K OHM	1
R1203			CHIP RES. 1/10W J 2.2K OHM	1
R1204			CHIP RES. 1/10W J 2.7K OHM	1
R1205			CHIP RES. 1/10W J 4.7K OHM	1
R1206			CHIP RES. 1/10W J 6.8K OHM	1
R1207			CHIP RES. 1/10W J 15K OHM	1
R1216			CHIP RES. 1/10W J 1K OHM	1
R1220			CARBON RES. 1/4W J 100K OHM	1
R1221			CARBON RES. 1/4W J 100K OHM	1
R1222			CHIP RES. 1/10W J 1K OHM	1
R1223			CARBON RES. 1/4W J 100K OHM	1
R1224			CHIP RES. 1/10W J 5.6K OHM	1
R1225			CARBON RES. 1/4W J 100 OHM	1
R1229			CHIP RES. 1/10W J 4.7K OHM	1
R1230			CHIP RES. 1/10W J 5.6K OHM	1
R1231			CARBON RES. 1/4W J 10K OHM	1
R1232			CHIP RES. 1/10W J 2.7K OHM	1
R1233			CHIP RES. 1/10W J 100 OHM	1
R1234			CHIP RES. 1/10W J 100 OHM	1
R1235			CARBON RES. 1/4W J 6.8K OHM	1
R1236			CARBON RES. 1/4W J 22K OHM	1
R1237			CHIP RES. 1/10W J 10K OHM	1
R1240			CHIP RES. 1/10W J 1M OHM	1
R1241			CHIP RES. 1/10W J 470 OHM	1

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Pos.No.	⚠	12 NC	Description	13MC3206/37
R1242			CHIP RES. 1/10W J 1K OHM	1
R1243			CHIP RES. 1/10W J 1K OHM	1
R1244			CHIP RES. 1/10W J 220K OHM	1
R1290			CHIP RES. 1/10W J 47K OHM	1
R1291			CHIP RES. 1/10W J 47K OHM	1
R1292			CHIP RES. 1/10W J 47K OHM	1
R1293			CHIP RES. 1/10W J 33K OHM	1
R1294			CHIP RES. 1/10W J 51K OHM	1
R1295			CHIP RES. 1/10W J 10K OHM	1
R1301			CHIP RES. 1/10W J 180K OHM	1
R1302			CHIP RES. 1/10W J 15K OHM	1
R1303			CHIP RES. 1/10W J 10K OHM	1
R1304			CHIP RES. 1/10W J 470 OHM	1
R1305			CHIP RES. 1/10W J 10K OHM	1
R1306			CHIP RES. 1/10W J 5.6K OHM	1
R1308			CHIP RES. 1/10W J 1K OHM	1
R1309			CHIP RES. 1/10W J 39K OHM	1
R1311			CHIP RES. 1/10W J 10M OHM	1
R1312			CHIP RES. 1/10W J 100 OHM	1
R1317			CARBON RES. 1/4W J 100 OHM	1
R1320			CHIP RES. 1/10W J 120K OHM	1
R1321			CARBON RES. 1/4W J 56 OHM	1
R1322			CHIP RES. 1/10W J 100 OHM	1
R1323			CHIP RES. 1/10W J 6.8K OHM	1
R1327			PCB JUMPER D0.6-P5.0	1
R1328			CARBON RES. 1/4W J 680 OHM	1
R1330			CARBON RES. 1/4W J 680 OHM	1
R1334			CHIP RES. 1/10W J 330 OHM	1
R1335			CHIP RES. 1/10W J 330 OHM	1
R1336			CHIP RES. 1/10W J 330 OHM	1
R1338			CARBON RES. 1/4W J 15 OHM	1
R1339			PCB JUMPER D0.6-P5.0	1
R1346			CHIP RES. 1/10W J 12K OHM	1
R1347			PCB JUMPER D0.6-P5.0	1
R1430			CARBON RES. 1/4W J 3.9K OHM	1
R1544			CARBON RES. 1/4W J 100K OHM	1
R1551			CARBON RES. 1/4W J 330 OHM	1
R1552	⚠		CARBON RES. 1/4W J 1.5K OHM	1
R1556			CARBON RES. 1/4W J 1 OHM	1
R1558			CARBON RES. 1/4W J 22K OHM	1
R1559			CARBON RES. 1/4W J 1K OHM	1
R1560			CHIP RES. 1/10W J 4.7K OHM	1
R1561			CHIP RES. 1/10W J 6.2K OHM	1
R1562			CARBON RES. 1/4W J 6.8 OHM	1
R1563			CARBON RES. 1/4W J 5.2 OHM	1
R1564			PCB JUMPER D0.6-P5.0	1
R1565	⚠		CARBON RES. 1/4W J 3.3 OHM	1
R1566	⚠		CARBON RES. 1/4W J 3.3 OHM	1
R1567	⚠		CARBON RES. 1/4W J 2.7 OHM	1
R1568			PCB JUMPER D0.6-P5.0	1
R1569			PCB JUMPER D0.6-P5.0	1
R1571			CARBON RES. 1/4W J 180 OHM	1
R1573			CARBON RES. 1/4W J 470 OHM	1
R1574			METAL OXIDE FILM RES. 2W J 1K OHM	1
R1574			METAL OXIDE FILM RES. 2W J 1K OHM	1
R1575			METAL OXIDE FILM RES. 2W J 1K OHM	1
R1575			METAL OXIDE FILM RES. 2W J 1K OHM	1
R1576	⚠		CHIP RES. 1/10W J 1K OHM	1
R1577			CARBON RES. 1/4W J 180 OHM	1
R1578			RES CARBON FILM 1/2W J 47 OHM	1
R1579			CARBON RES. 1/4W J 22 OHM	1
R1580			CARBON RES. 1/4W J 22 OHM	1
R1581			CARBON RES. 1/4W J 22 OHM	1
R1582			CARBON RES. 1/4W J 6.8 OHM	1
R1583	⚠		METAL OXIDE FILM RES. 1W J 1.8 OHM	1
R1583	⚠		METAL OXIDE FILM RES. 1W J 1.8 OHM	1
R1584			CARBON RES. 1/4W J 1K OHM	1
R1586			CARBON RES. 1/4W J 1K OHM	1

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Pos.No.	⚠	12 NC	Description	13MC3206/37
R1587			CARBON RES. 1/4W J 100K OHM	1
R1588			CARBON RES. 1/4W J 100K OHM	1
R1589			CARBON RES. 1/4W J 1K OHM	1
R1590			CARBON RES. 1/4W J 1K OHM	1
R1592	⚠		CARBON RES. 1/4W J 100K OHM	1
R1593			CARBON RES. 1/4W J 150K OHM	1
R1594			CHIP RES. 1/10W J 68K OHM	1
R1595	⚠		CHIP RES. 1/10W J 15K OHM	1
R1596			CHIP RES. 1/10W J 6.8K OHM	1
R1597			CHIP RES. 1/10W J 470 OHM	1
R1598	⚠		CHIP RES. 1/10W J 22K OHM	1
R1599	⚠		CHIP RES. 1/10W J 10K OHM	1
R1601	⚠		CEMENT RES. 3W K 1.2 OHM	1
R1601	⚠		CEMENT RESISTOR 3W K 1.2 OHM	1
R1602			CARBON RES. 1/4W J 220 OHM	1
R1603			CARBON RES. 1/4W J 220 OHM	1
R1604	⚠		CARBON RES. 1/4W J 680K OHM	1
R1605	⚠		CARBON RES. 1/4W J 680K OHM	1
R1606			PCB JUMPER D0.6-P5.0	1
R1607	⚠		CARBON RES. 1/4W J 680K OHM	1
R1608			CARBON RES. 1/4W J 180K OHM	1
R1610			CARBON RES. 1/4W J 1.5K OHM	1
R1611	⚠		METAL OXIDE FILM RES. 2W J 0.39 OHM	1
R1611	⚠		METAL OXIDE FILM RES. 2W J 0.39 OHM	1
R1612			METAL OXIDE FILM RES. 1W J 3.3 OHM	1
R1612			METAL OXIDE FILM RES. 1W J 3.3 OHM	1
R1613			CARBON RES. 1/4W J 120 OHM	1
R1614			CARBON RES. 1/4W J 2.2K OHM	1
R1615			CARBON RES. 1/4W J 33K OHM	1
R1617			CARBON RES. 1/4W J 180 OHM	1
R1618			METAL OXIDE FILM RES. 2W J 8.2K OHM	1
R1618			METAL OXIDE FILM RES. 2W J 8.2K OHM	1
R1619	⚠		CARBON RES. 1/4W J 6.8 OHM	1
R1622			CARBON RES. 1/4W J 1.2K OHM	1
R1623			CARBON RES. 1/4W J 1.5K OHM	1
R1624			CARBON RES. 1/4W J 33K OHM	1
R1625			CARBON RES. 1/4W J 43K OHM	1
R1629	⚠		CARBON RES. 1/4W J 10K OHM	1
R1630			CARBON RES. 1/4W J 10K OHM	1
R1631			CARBON RES. 1/4W J 12K OHM	1
R1632	⚠		CHIP RES. 1/10W J 1K OHM	1
R1633	⚠		CARBON RES. 1/4W J 5.6K OHM	1
R1634			CHIP RES. 1/10W J 6.8K OHM	1
R1635			CHIP RES. 1/10W J 10K OHM	1
R1636			CARBON RES. 1/4W J 330 OHM	1
R1637			CHIP RES. 1/10W J 22K OHM	1
R1638			CHIP RES. 1/10W J 22K OHM	1
R1639	⚠		CARBON RES. 1/2W J 1.5K OHM	1
R1640			CHIP RES. 1/10W J 56K OHM	1
R1641			CHIP RES. 1/10W J 10K OHM	1
R1642			CHIP RES. 1/10W J 6.8K OHM	1
R1644			CHIP RES. 1/10W J 47K OHM	1
R1645			CHIP RES. 1/10W J 82K OHM	1
R1647			CARBON RES. 1/4W J 6.8 OHM	1
R1648			CARBON RES. 1/4W J 6.8 OHM	1
R1649			CARBON RES. 1/4W J 12 OHM	1
R1650			PCB JUMPER D0.6-P5.0	1
R1654			CARBON RES. 1/4W J 10 OHM	1
R1666			PCB JUMPER D0.6-P5.0	1
R1673			CARBON RES. 1/4W J 560 OHM	1
R1675			CARBON RES. 1/4W J 1 OHM	1
R1686			CARBON RES. 1/4W J 10 OHM	1
R1687			CARBON RES. 1/2W J 27 OHM	1
R1689			CHIP RES. 1/10W F 5.6K OHM	1
R1689			CHIP RES. 1/10W F 5.6K OHM	1
R1690			CHIP RES. 1/10W F 15K OHM	1
R1690			CHIP RES. 1/10W F 15K OHM	1
R1694			CHIP RES. 1/10W J 10 OHM	1

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Pos.No.	⚠	12 NC	Description	13MC3206/37
R1701			CHIP RES. 1/10W J 75 OHM	1
R1704			CHIP RES. 1/10W J 18K OHM	1
R1706			CHIP RES. 1/10W J 15K OHM	1
R1801			CHIP RES. 1/10W J 2.7K OHM	1
R1802			CHIP RES. 1/10W J 3.9K OHM	1
R1805			PCB JUMPER D0.6-P5.0	1
R1806			PCB JUMPER D0.6-P5.0	1
R1807			CARBON RES. 1/4W J 4.7K OHM	1
R1808			CARBON RES. 1/4W J 2.2K OHM	1
R1809	⚠		METAL OXIDE FILM RES. 1W J 6.8 OHM	1
R1809	⚠		METAL OXIDE FILM RES. 1W J 6.8 OHM	1
R1811			CHIP RES. 1/10W J 2.2K OHM	1
R1813			CHIP RES. 1/10W J 1.8K OHM	1
R1821			CARBON RES. 1/4W J 180 OHM	1
R1822			CARBON RES. 1/4W J 180 OHM	1
R1854			CHIP RES. 1/10W J 2.7K OHM	1
SWITCHES				
SW1201			TACT SWITCH SKQSAB	1
SW1201			TACT SWITCH KSM0612B	1
SW1201			TACT SWITCH TC-1104(H=5.0)	1
SW1202			TACT SWITCH SKQSAB	1
SW1202			TACT SWITCH KSM0612B	1
SW1202			TACT SWITCH TC-1104(H=5.0)	1
SW1203			TACT SWITCH SKQSAB	1
SW1203			TACT SWITCH KSM0612B	1
SW1203			TACT SWITCH TC-1104(H=5.0)	1
SW1204			TACT SWITCH SKQSAB	1
SW1204			TACT SWITCH KSM0612B	1
SW1204			TACT SWITCH TC-1104(H=5.0)	1
SW1205			TACT SWITCH SKQSAB	1
SW1205			TACT SWITCH KSM0612B	1
SW1205			TACT SWITCH TC-1104(H=5.0)	1
SW1206			TACT SWITCH SKQSAB	1
SW1206			TACT SWITCH KSM0612B	1
SW1206			TACT SWITCH TC-1104(H=5.0)	1
SW1207			TACT SWITCH SKQSAB	1
SW1207			TACT SWITCH KSM0612B	1
SW1207			TACT SWITCH TC-1104(H=5.0)	1
			SUB CBA	
CAPACITORS				
C9634			ELECTROLYTIC CAP. 470UF/10V M	1
C9634			ELECTROLYTIC CAP. 470UF/10V M	1
C9634			ELECTROLYTIC CAP. 470UF/10V M	1
C9635			ELECTROLYTIC CAP. 1000UF/6.3V M	1
C9635			ELECTROLYTIC CAP. 1000UF/6.3V M	1
C9635			ELECTROLYTIC CAP. 1000UF/6.3V M	1
C9637			ELECTROLYTIC CAP. 100UF/10V M	1
C9637			ELECTROLYTIC CAP. 100UF/10V M	1
C9637			ELECTROLYTIC CAP. 100UF/10V M	1
C9662			ELECTROLYTIC CAP. 470UF/16V M	1
C9662			ELECTROLYTIC CAP. 470UF/16V M	1
C9662			ELECTROLYTIC CAP. 470UF/16V M	1
C9664			ELECTROLYTIC CAP. 220UF/6.3V M	1
C9664			ELECTROLYTIC CAP. 220UF/6.3V M	1
C9664			ELECTROLYTIC CAP. 220UF/6.3V M	1
C9670			ELECTROLYTIC CAP. 470UF/10V M	1
C9670			ELECTROLYTIC CAP. 470UF/10V M	1
C9670			ELECTROLYTIC CAP. 470UF/10V M	1
DIODES				
D9630			SWITCHING DIODE 1SS133(T-77)	1
D9630			SWITCHING DIODE 1N4148	1
D9638			ZENER DIODE MTZJT-773.9B	1
D9638			ZENER DIODE DZ-3.9BSBT265	1
D9641			ZENER DIODE MTZJT-775.6C	1
D9641			ZENER DIODE DZ-5.6BSCT265	1
ICS				
IC9602			VOLTAGE REGULATOR TLV1117IDCYRG3	1
IC9602			VOLTAGE REGULATOR LD1117SC-R	1

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ELECTRICAL PARTS LIST

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Pos.No.	⚠	12 NC	Description	
IC9602			VOLTAGE REGULATOR LM1117S-ADJ	1
IC9603			IC SHUNT REGULATOR KIA431-AT/P	1
COIL				
L9615			INDUCTOR 10UH-K-5FT	1
TRANSISTORS				
Q9608			TRANSISTOR 2SC2785(F)	1
Q9608			TRANSISTOR 2SC2785(H)	1
Q9608			TRANSISTOR 2SC2785(J)	1
Q9608			TRANSISTOR KTC3199-GR-AT/P	1
Q9608			TRANSISTOR KTC3198-GR-AT/P	1
Q9608			TRANSISTOR 2SC1815-GR(TE2 F T)	1
Q9610			TRANSISTOR 2SA1175(F)	1
Q9610			TRANSISTOR KTA1267-GR-AT/P	1
Q9610			TRANSISTOR KTA-1266-GR-AT/P	1
Q9610			TRANSISTOR 2SA1015-GR(TE2 F T)	1
Q9612			TRANSISTOR 2SC2785(F)	1
Q9612			TRANSISTOR 2SC2785(H)	1
Q9612			TRANSISTOR 2SC2785(J)	1
Q9612			TRANSISTOR KTC3199-GR-AT/P	1
Q9612			TRANSISTOR KTC3198-GR-AT/P	1
Q9612			TRANSISTOR 2SC1815-GR(TE2 F T)	1
Q9615			TRANSISTOR 2SC2120-O(TE2 F T)	1
Q9615			TRANSISTOR 2SC2120-Y(TE2 F T)	1
RESISTORS				
R9613			METAL OXIDE FILM RES. 1W J 2.2 OHM	1
R9613			METAL OXIDE FILM RES. 1W J 2.2 OHM	1
R9614			RES CHIP 2125 1/6W J 0.15 OHM	1
R9646			CARBON RES. 1/4W J 68 OHM	1
R9651			CHIP RES. 1/10W J 47K OHM	1
R9652			CHIP RES. 1/10W J 220 OHM	1
R9655			CARBON RES. 1/4W J 1 OHM	1
R9656			CHIP RES. 1/10W J 22K OHM	1
R9657			CHIP RES. 1/10W J 22K OHM	1
R9658			CARBON RES. 1/4W J 1 OHM	1
R9659			CARBON RES. 1/4W J 560 OHM	1
R9660			CARBON RES. 1/4W J 560 OHM	1
R9661			CHIP RES. 1/10W J 1K OHM	1
R9671			CARBON RES. 1/4W J 330 OHM	1
R9681			CHIP RES. 1/10W J 10K OHM	1
R9682			CHIP RES. 1/10W J 22K OHM	1
R9687			CHIP RES. 1/10W F 5.6K OHM	1
R9687			CHIP RES. 1/10W F 5.6K OHM	1
R9688			CHIP RES. 1/10W F 15K OHM	1
R9688			CHIP RES. 1/10W F 15K OHM	1
R9695			CARBON RES. 1/4W J 390 OHM	1
R9747			CARBON RES. 1/4W J 390 OHM	1
R9748			CARBON RES. 1/4W J 390 OHM	1
R9788			CHIP RES. 1/10W J 130 OHM	1
R9789			CHIP RES. 1/10W J 130 OHM	1
R9790			CHIP RES. 1/10W J 100 OHM	1
R9791			CHIP RES. 1/10W J 100 OHM	1
			CRT CBA	
CL2501			WIRE ASSEMBLY 8P 200MM	1
JK2501	⚠		CRT SOCKET ISMP02S	1
CAPACITORS				
C2501	⚠		CERAMIC CAP. B K 1000PF/2KV	1
C2501	⚠		CERAMIC CAP. B K 1000PF/2KV	1
C2511			CHIP CERAMIC CAP. B K 390PF/50V	1
C2521			CHIP CERAMIC CAP. B K 390PF/50V	1
C2531			CHIP CERAMIC CAP. B K 470PF/50V	1
COIL				
L2501			PCB JUMPER D0.6-P5.0	1
TRANSISTORS				
Q2511			NPN TRANSISTOR 2SC2482(T6FUNAIF M)	1
Q2511			NPN TRANSISTOR KTC3207-AT/P	1
Q2521			NPN TRANSISTOR 2SC2482(T6FUNAIF M)	1
Q2521			NPN TRANSISTOR KTC3207-AT/P	1

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ELECTRICAL PARTS LIST

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Pos.No.	⚠	12 NC	Description	
Q2531			NPN TRANSISTOR 2SC2482(T6FUNAIF M)	1
Q2531			NPN TRANSISTOR KTC3207-AT/P	1
RESISTORS				
R2510	⚠		METAL OXIDE FILM RES. 1W J 15K OHM	1
R2510	⚠		METAL OXIDE FILM RES. 1W J 15K OHM	1
R2511			CHIP RES. 1/10W J 10 OHM	1
R2512			CARBON RES. 1/4W J 5.6K OHM	1
R2515			CHIP RES. 1/10W J 560 OHM	1
R2516A			CARBON RES. 1/4W J 1.5K OHM	1
R2517			CARBON RES. 1/4W J 1.5K OHM	1
R2520	⚠		METAL OXIDE FILM RES. 1W J 15K OHM	1
R2520	⚠		METAL OXIDE FILM RES. 1W J 15K OHM	1
R2521			CHIP RES. 1/10W J 10 OHM	1
R2522			CARBON RES. 1/4W J 5.6K OHM	1
R2525			CHIP RES. 1/10W J 560 OHM	1
R2526A			CARBON RES. 1/4W J 1.5K OHM	1
R2527			CARBON RES. 1/4W J 1.5K OHM	1
R2530	⚠		METAL OXIDE FILM RES. 1W J 15K OHM	1
R2530	⚠		METAL OXIDE FILM RES. 1W J 15K OHM	1
R2531			CHIP RES. 1/10W J 10 OHM	1
R2532			CARBON RES. 1/4W J 5.6K OHM	1
R2535			CHIP RES. 1/10W J 560 OHM	1
R2536			CARBON RES. 1/4W J 1.5K OHM	1
R2537			CARBON RES. 1/4W J 1.5K OHM	1
			JUNCTION CBA	
CL2801			WIRE ASSEMBLY 2P 180MM	1
CONNECTOR				
CN2801			242 SERIES CONNECTOR TUC-P04X-B1 WHT ST	1

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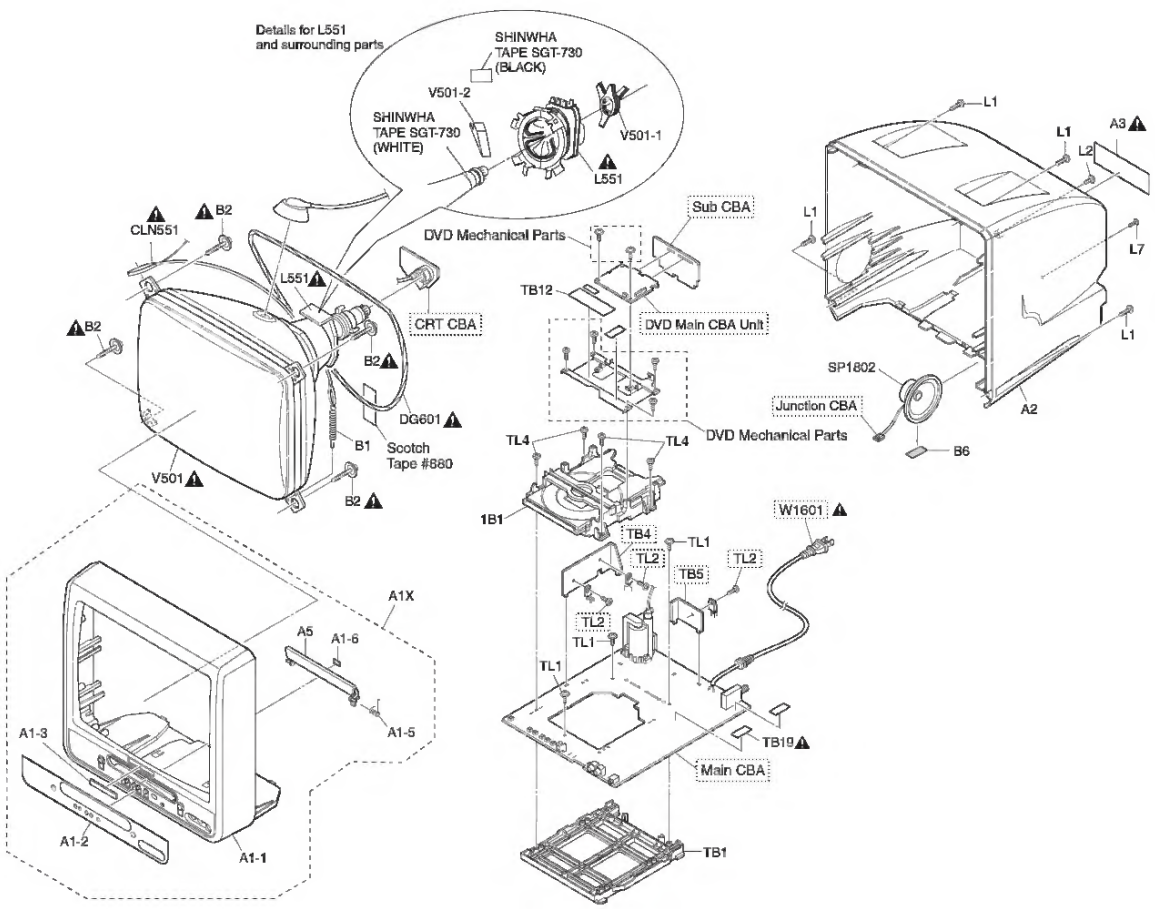
EXPLODED VIEWS

Cabinet



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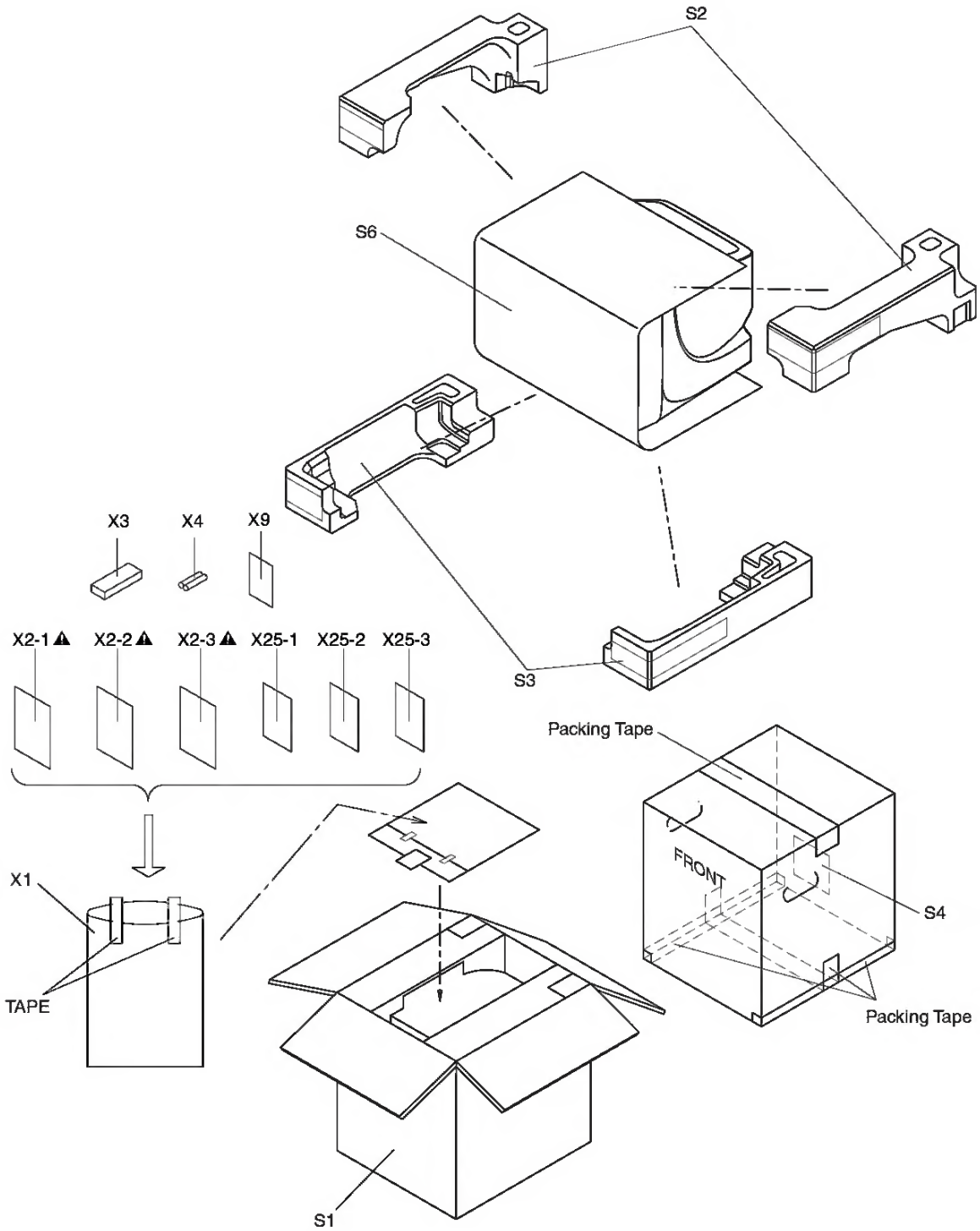
Packing



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MECHANICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

MECHANICAL PARTS LIST				13MC3206/37
Pos.No.	⚠	**12 NC**	**Description**	
A1X			FRONT CABINET ASSEMBLY T6201UB	1
A1-1			FRONT CABINET T6201UB	1
A1-2			CONTROL PLATE T6201UB	1
A1-3			BRAND PLATE T6201UB	1
A1-5			TRAY SPRING TD707UH	1
A1-6			CLOTH(B) L5201U0 15X10X1.0T	1
A2			REAR CABINET T6201UB	1
A3	⚠		RATING LABEL T6201UB	1
A5			TRAY PANEL T6201UB	1
1B1			DVD MECHA X7 SINGLE (PCE) N79U2KVM	1
B1			SPRING TENSION B0060B0 EM40606	1
B2	⚠		M5 CRT SCREW(B) B4000UA	1
B6			CLOTH(10X30XT0.5) B5900UA	1
CLN551	⚠		WIRE ASSEMBLY CRT GND 390MM	1
DG601	⚠		DEGAUSSING COIL F-019	1
DG601	⚠		DEGAUSSING COIL AI-003-00	1
L1			SCREW P-TIGHT 4X16 BIND HEAD +	1
L2			SCREW TAPPING M4X14	1
L7			SCREW P-TIGHT 3X10 BIND HEAD+	1
SP1602			SPEAKER S06F02B	1
TB1			TRAY CHASSIS T6200UA	1
TB12			LASER CAUTION LABEL T6200UA	1
TB19	⚠		13V CHASSIS NO.LABEL TJ T6200UA	1
TL1			SCREW P-TIGHT M3*10 WASHERHEAD+	1
TL4			SCREW P-TIGHT 3X16 BIND HEAD +	1
			PACKING	
S1			CARTON T6201UB	1
S2			STYROFOAM TOP ASSEMBLY T6201UB	1
S3			STYROFOAM BOTTOM ASSEMBLY T6201UB	1
S4			SERIAL NO.LABEL T6201UB	1
S6			SET SHEET B5506UG 600X1500	1
			ACCESSORIES	
X1			BAG POLYETHYLENE 235X365XT0.03	1
X2-1	⚠		OWNERS MANUAL(EN) T8201UB	1
X2-2	⚠		OWNERS MANUAL(SP) T8201UB	1
X2-3	⚠		OWNERS MANUAL(FR) T8201UB	1
X3		9965 000 34749	REMOTE CONTROL NF400UD 144/ECNX701/NF400UD	1
X4			DRY BATTERY R03/2S	1
X9			CARD REGISTRATION (EN) TD957UH	1
X25-1			QUICK SET UP GUIDE(EN) T8201UB	1
X25-2			QUICK SET UP GUIDE(SP) T8201UB	1
X25-3			QUICK SET UP GUIDE(FR) T8201UB	1
			CRT TYPE A	
L551	⚠		DEFLECTION YOKE LLBY00ZSY005	1
L551	⚠		DEFLECTION YOKE KDY3GDA82X	1
L551	⚠		DEFLECTION YOKE (PB FREE) CDY-BM1411A1	1
V501	⚠		CRT A34AGT13X	1
V501-1			C.P.MAGNET JH225-FN-00	1

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MECHANICAL PARTS LIST

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Pos.No.	⚠	12 NC	Description	
V501-1			CPM E-225-F02	1
V501-2			WEDGE FT-00110W	1
			CRT TYPE B	
L551	⚠		DEFLECTION YOKE LLBY00ZSY002	1
L551	⚠		DEFLECTION YOKE KDY3GCE83X	1
L551	⚠		DEFLECTION YOKE (PB FREE) CDY-BM1426A1	1
V501	⚠		CRT A34JOQ093X	1
V501-1			C.P.MAGNET JH225-FN-00	1
V501-1			CPM E-225-F02	1
V501-2			WEDGE FT-00110W	1
			CRT TYPE C	
L551	⚠		DEFLECTION YOKE KDY3GCE83X	1
L551	⚠		DEFLECTION YOKE LLBY00ZSY002	1
L551	⚠		DEFLECTION YOKE CDY-M1456S	1
V501	⚠		CRT A34KQW42X	1
V501-1			C.P.MAGNET JH225-014	1
V501-1			CPM E-225-F01	1
V501-2			WEDGE FT-00110W	1
			CRT TYPE D	
L551	⚠		DEFLECTION YOKE LLBY00ZSY002	1
L551	⚠		DEFLECTION YOKE KDY3GCE83X	1
L551	⚠		DEFLECTION YOKE CDY-M1456S	1
L551	⚠		DEFLECTION YOKE (PB FREE) CDY-BM1426A1	1
V501	⚠		CRT A34KPU02XX	1
V501-1			C.P.MAGNET JH225-FN-00	1
V501-1			CPM E-225-F02	1
V501-2			WEDGE FT-00110W	1
			CRT TYPE E	
L551	⚠		DEFLECTION YOKE LLBY00ZSY002	1
L551	⚠		DEFLECTION YOKE KDY3GCE83X	1
L551	⚠		DEFLECTION YOKE CDY-M1456S	1
L551	⚠		DEFLECTION YOKE (PB FREE) CDY-BM1426A1	1
V501	⚠		CRT A34JXV70X	1
V501-1			C.P.MAGNET JH225-FN-00	1
V501-1			CPM E-225-F02	1
V501-2			WEDGE FT-00110W	1

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